AMATEUR RADIO

JUNE 1948

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

FOR THE EXPERIMENTER & RADIO ENTHUSIAST

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6D.

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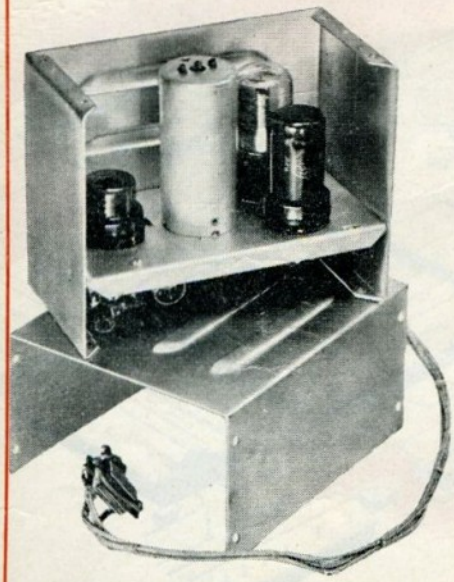

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— IN THIS ISSUE —

EDITORIAL

★

Elsewhere in this issue appears a complete schedule of frequencies now available for use by the Australian Amateur. The latest additions to this list are as follows:—

288-296 M.c. and
576-585 M.c.

The use of these frequencies involve techniques and apparatus which will occupy the attention of all serious workers for a long time to come.

The Radio Society of Great Britain has produced an interesting handbook on micro-wave technique, an advance copy of which has come to hand, and which will doubtless serve as a suitable introduction to most of us. In this connection, the Federal Executive have written the R.S.G.B. Headquarters requesting that a copy of the book be forwarded to each Division for perusal. Arrangements are also being made to enable members to obtain their own personal copies thereafter.

Operation of these new frequencies will rest very much on new tubes that have lately been developed in Great Britain, and which have amazing performance, yielding as they do their full output on these frequencies. Disposals' equipment, at present available, does not appear to cover these frequencies, but here again the ingenuity of the serious worker will overcome these obstacles.

The bands will doubtless be opened up on the basis of "Optical Range," but who knows where they will finish! Steady application to the problems involved will enlarge our knowledge of ultra-high frequency work, and fit us for service in many important technical applications should the national need ever require it.

—P.E.

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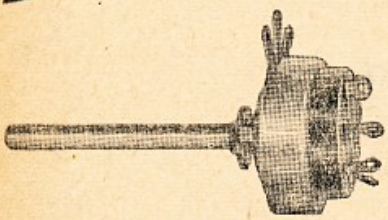

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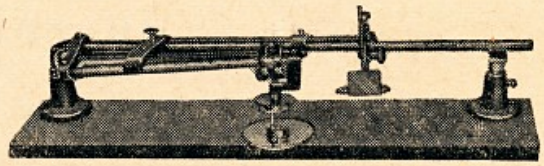

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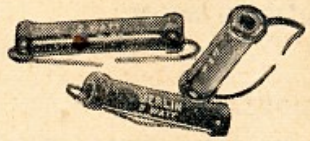

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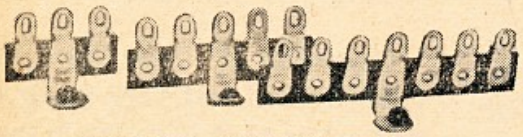

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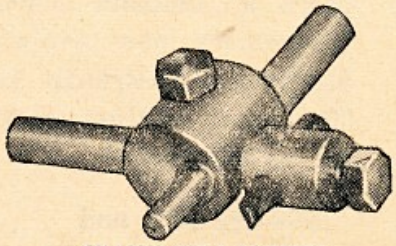

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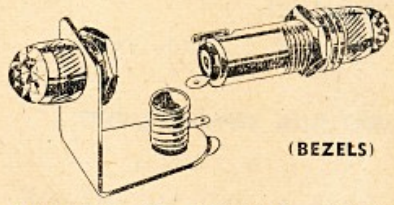

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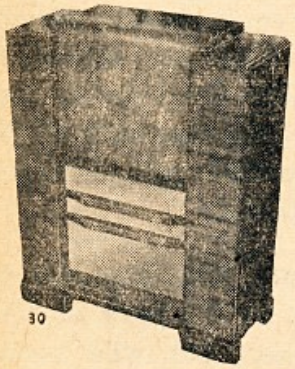

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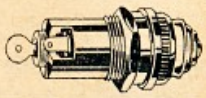

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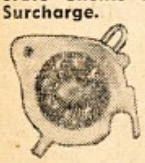

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Double Conversion Receiver

BY C. C. WARING*, VK3YW

Saturday morning, 2nd September, 1939, all Hams received a long telegram and we were off the air. After pottering about for a week or two, the writer decided the best way to fill in the spare time was to build the receiver he had always dreamed about.

DESIGN Before gathering up all the bits and pieces a few thoughts on paper seemed to be in order to solidify all the ideas that had been disturbing the night's sleep.

1—General coverage and Ham band tuning from 3.5 to 28 Mc.
2—Ample band spread on 3.5, 7, 14 and 28 Mc. bands.
3—R.F. stage ahead of converter to give good signal-to-noise ratio.
4—I.F. stages sufficient to give good selectivity and ample image ratio.
5—Ample gain to give proper a.v.c. action.
6—Crystal filter with variable selectivity and rejection controls on the panel.
7—A satisfactory noise silencer or limiter with threshold adjustment on panel.
8—Signal meter (optional).
9—A.V.C. with cut-out switch on the panel for c.w.
10—B.F.O. with cut-out switch on panel.
11—Separate r.f. and a.f. gain controls.
12—Plug-in coils for simplicity and low losses.
13—Band-set condensers brought out to front of panel for easy adjustment.
14—Standby switch in B+ lead so that receiver can be switched off during transmitting periods.
15—Headphone jack and externally-mounted speaker.
16—Doublet antenna connections.
17—Complete shielding to minimise stray r.f. pick up.
18—Strong chassis construction for stability.
19—External power supply to minimise heat production and frequency drift in receiver.

Quite an imposing list when one writes it down, but not so hard to satisfy when you get down to tin tacks. Perhaps before the reader goes any further, and feels that a receiver containing 13 tubes and strings of tuned circuits would be too complicated and touchy to get going and to keep lined up, let him remember that most of the tuned circuits are in the i.f's. and once peaked need not be touched for many a day, there is nothing complicated about the receiver. All circuits are straight-forward, even the noise silencer chosen is amendable to simple explanation without any hair-pulling maths; anyway let's look at the circuit and see how she goes.

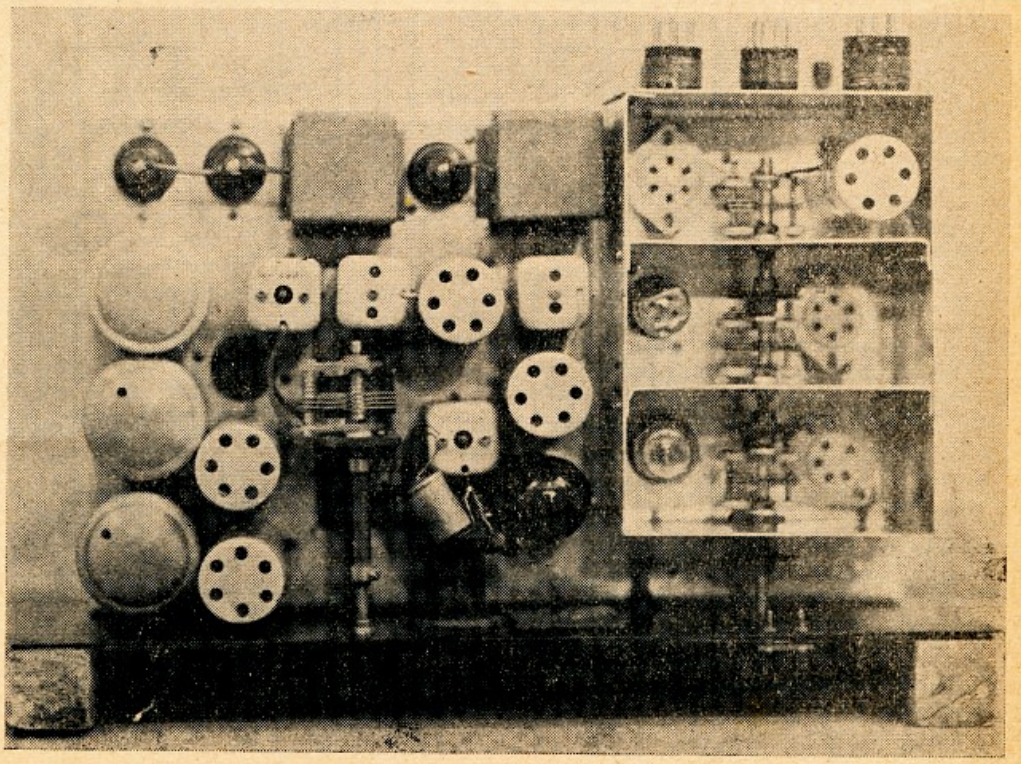
* 12 Skene Street, Stawell. Victoria.

I.F. CHANNELS A glance at the circuit diagram will show that basically the receiver is a superheterodyne using two intermediate frequencies, of course there is nothing new in this; the idea, I believe, was included in Armstrong's original patents, and is used universally with the various h.f. converters on the market at present. The use of an i.f. of 465 or 455 Kc. is a compromise between the selectivity and high gain to be obtained at low frequencies and image ratio. It is well known that low i.f's. do not give adequate image ratios at high frequencies and that higher i.f's. are less selective but give better image ratios, so it seems the obvious thing to use both.

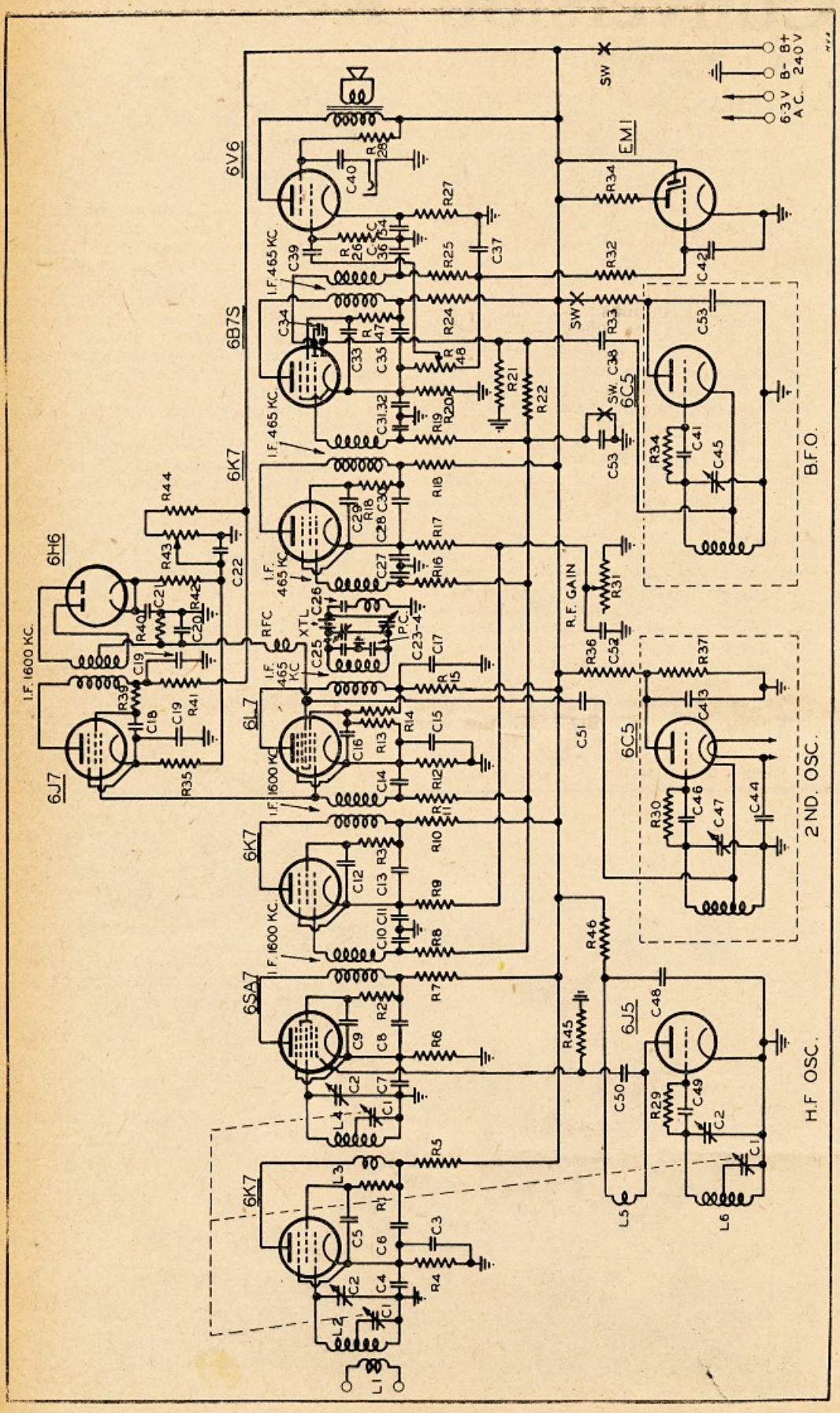
A frequency of 1600 Kc. was selected as the first i.f., this will give adequate image ratio on 28 Mc. Any of the popular i.f's. on the market round about this frequency may be used; 1.9 Mc. i.f. should be excellent. The second i.f. presents itself as a problem which can have a number of answers. For c.w. work a crystal filter of 465 Kc. or thereabouts, works out very nicely, and as the diagram shows I use two stages of i.f. following the crystal, not to get increased gain (one stage will give you plenty), but to give increased selectivity. The increase in selectivity given by the extra stage, especially when it is cut back as shown, is well worth while.

If you have no crystal, don't intend to get one, or if you are only interested in phone, an i.f. of 175 Kc. will give you much sharper tuning than the plain 465 Kc. stages. At the lower i.f. you will have so much gain to pour down the sink that instead of using single i.f. transformers between stages you can use two transformers (back to back and coupled through a small condenser of 3-4 pF.) to give a bandpass effect. This will undoubtedly mean shaving cycles off the frequency response, but at the same time will cut out many of those ever-present heterodynes.

At this stage, no doubt, somebody has wondered about the possibility of harmonics or beat frequency response, from the three oscillators employed, getting into the front end; this admittedly could be a problem. It was tackled in this receiver firstly by thorough shielding of all oscillator circuits. The shielding shown round the front end is carried down under the chassis and finished off with a cover-plate; the second converter oscillator and the b.f.o. valves, coils and sockets are both well shielded above and below the chassis with all by-pass condensers inside the shields. Secondly, by the use of low voltages on the b.f.o. and second oscillator; and thirdly, by choosing a frequency for the second oscillator (which has the chance of being the biggest nuisance) which keeps it clear of the lower frequency Amateur bands. In this receiver this oscillator runs on 2065 Kc. and does not meet up with an Amateur band until it reaches the 28 Mc. band, but harmonics seem to be conspicuous by their absence at the lower frequencies.



Top view showing lay out of R.F., I.F. and location of band spread condensers.



NOISE SILENCER The noise silencer will probably be called complicated—frankly it is not—and goes back to Lamb's noise silencer of 1932. "A noise silencer is a devise which, when properly adjusted, will disable the receiver during high amplitude noises of short duration and prevent their passing on to other parts of the circuit where overloading can occur, and produce secondary effects which completely spoil reception."

In the noise silencer shown, the silencing action takes place in the second converter (a 6L7). In addition to the silencer-converter tube, use is made of a 6J7 as a noise amplifier (connected in parallel to the 6L7) coupled by a noise transformer to a 6H6 noise rectifier. The coupling transformer will need to be tailor-made and consists of a tuned plate coil (1600 Kc.) and an untuned centre-tapped secondary. It was made by stripping the original 1600 Kc. secondary off and replacing by winding 60 turns of 28 gauge silk covered wire as close as possible to each side of the primary.

Operation is as follows. The noise is amplified by the 6J7 and rectified by the 6H6. The pulsating d.c. voltage developed by rectification across the diode resistor is applied through r.f.c. to the No. 3 (injection) grid of the 6L7; the resulting increase of bias will stop conversion, not for long of course as the noise pulses are of short duration and

R1, R2, R3, R8, R11, R14, R16, R18, R19, R39, R40, R47—0.1 Meg., ½ watt.
R4, R9, R35—500 Ohms, 1 watt.
R5, R7, R10, R15, R18, R20, R24, R25—3,000 Ohms, 1 watt.
R6—250 Ohms, 1 watt.
R12—2,000 Ohms, 1 watt.
R13, R30, R33, R34, R39—50,000 Ohms, ½ watt.
R17—1,000 Ohms, 1 watt.
R21, R34—2 Meg., 1 watt.
R22—1 Meg., ½ watt.
R26—0.5 Meg., ½ watt.
R27—250 Ohms, W.W.
R28—0.2 Meg.
R31, R43—3,000 Ohms, W.W. Pot.
R32—3 Meg., ½ watt.
R36, R44—30,000 Ohms, 1 watt.
R37—10,000 Ohms, 1 watt.
R41—4,000 Ohms, 1 watt.
R42—0.25 Meg., ½ watt.
R45—20,000 Ohms, ½ watt.
R46—25,000 Ohms, 1 watt.
R48—0.5 Meg. Pot.
C1—Three 30 pF. band spread ganged.
C2—100 pF. band set.
C3, C4, C6, C7, C8, C9, C10, C11, C12, C13, C14, C16, C17, C18, C19, C39, C40—0.01 uF.
C5—0.005 uF.
C15, C21, C27, C29, C30, C31, C33, C35, C42, C43, C44, C48—0.05 uF.
C20, C25, C26, C50, C51—50 pF.
C22, C52—0.5 uF.
C23, C24, C34, C36, C37, C41, C46, C49—100 pF.
C28—0.1 uF.
C32, C54—25 uF.
C38—1 pF.
C53—0.02 uF.
C45, C47—465 Kc. Padders.
P.C.—Three Plate Midget.

punch a short-time hole in the signal (so short that the ear is not aware of it). Capacity transfer of strong signals are eliminated in this arrangement as the plate and grid circuits of the 6L7 are related only by conversion.

To aid in the silencing action the oscillator injection voltage is made small by running the oscillator at low voltage and the 6L7 is operated at high bias and low screen voltage to reduce the conversion gain. The start of the silencing action is controlled by the resistor R43 which acts as a threshold control by varying the cathode bias on the 6J7 and 6H6.

It will be noticed that the silencer is ahead of the crystal filter; in this position apart from the fact that the silencer operates better by being in a comparatively unselective part of the receiver, it cuts out those annoying pings a crystal filter delights to give out when hit by a sharp noise peak.

CRYSTAL FILTER The crystal filter is easy to make and does not cause a drop in the signal to any extent when switched in, although it does give the impression of loss of sensitivity due to the marked cutting down of background noise. Noise in receivers is directly related to band-width and it is only logical that when the band-width is cut (and cut severely when the crystal goes in) that the background noise will drop.

As in the noise silencer a little simple tailoring is necessary for both input and output transformers of the crystal filter. The input transformer consists of an ordinary 465 Kc. i.f. transformer with the 100 pF. fixed condenser across the secondary removed and replaced by two condensers of similar capacity connected in series and shunted across the coil. The centre connection between these condensers is earthed to give a centre tap effect for the input circuit, the remaining 50 pF. capacity is made up by condenser C25 across the input circuit. This resonates the whole circuit to the i.f. frequency when the crystal is shorted out, and acts as a selectivity control when the filter is in operation; selectivity increasing as the condenser is tuned away from resonance (for the theory of this see past issues of "Amateur Radio" or the R.S.G.B. "Radio Amateur's Handbook").

The output transformer consists of an air-core i.f. from the junk box. One coil was stripped off, and 35 turns of 30 gauge enamel wire (which happened to be handy) were scramble-wound as close to the remaining coil as possible. This gives a step up effect from the filter and a better impedance match. Phasing condenser P.C. consists of a 3 plate midget with the crystal shorting switch attached to the shaft. This switch consists of a piece of copper wire soldered to the shaft and a small piece of copper or brass strip bolted to the isolantite back plate to make a wiping contact. Both the phasing condenser and the selectivity control condenser are brought out to the front panel through insulated couplings, necessary in this case as both sides of the condensers are hot.

AUDIO SECTION The audio end may cause a slight amount of eyebrow lifting due to its apparent lack of gain, but the writer does not think it necessary to have four, five or more watts of audio worrying the family and neighbours. The 6V6G as shown operates with a screen voltage of 100 and has an output of 1.5 watts with a load of 14,000 ohms. 1.5 watts gives ample volume and enables me to listen to VK3WI while I chop the wood outside, and perhaps better still it only takes an input voltage of 5 volts to drive it. As there is plenty of gain ahead of the diode it has no difficulty in delivering the output necessary.

Another convenient aspect of the 200,000 ohm resistor in the 6V6G screen lead is that it makes a handy audio choke to plug the phones in between screen and earth (through a blocking condenser of course). Taking the phone output from the screen gives a nice balance between headphone output and speaker level; by this I mean that when the speaker is plugged in, it is not necessary to turn the audio gain up.

A.V.C. This is applied to the three i.f. amplifier tubes and the second converter, which gives ample control and a fairly steady output over a wide range of signals. It is not applied to the r.f. amplifier ahead of the 6SA7 as this tube is run flat out at all times to get as good a signal-to-noise ratio as possible.

The r.f. stage was originally coupled into the a.v.c. line and also to the r.f. gain control because it was thought that overloading would occur with strong signals. Experience disproved this idea and it was allowed to operate at maximum ratings at all times with an improvement in signal-to-noise ratio.

COIL TABLE

3.5 Mc. Band

Coil	Turns	Wire	Length	Tap	Band Set approx.
L1	7	26*	close-wound		
L2	27	"	"		
L3	7	"	"		
L4	27	"	"		
L5	7	"	"		
L6	15	"	½"		70%
			7 Mc. Band		
L1	4	30*	close-wound		
L2	15	30†	½"	8	
L3	5	30*	inter-wound with L4		
L4	15	30†	½"	8	
L5	5	30*	close-wound		
L6	10¼	30†	⅝"	5¼	60%
			14 Mc. Band		
L1	4	30*	close-wound		
L2	6½	26*	½"	3¼	
L3	4	30†	inter-wound with L4		
L4	6½	26*	½"	3¼	
L5	3¼	"	⅛"		
L6	6	22*	½"	3	70%
			28 Mc. Band		
L1	3	30*	close-wound		
L2	3	"	⅜"	1	
L3	3	"	inter-wound with L4		
L4	3	"	⅜"	1	
L5	2	"	close-wound		
L6	2½	26*	⅜"	1	40%

* Enamel † D.S.C.

BAND SPREAD An essential feature in any Ham receiver is band spread which is obtained by the tapped coil method. The band-set condensers are 100 pF. variable condensers across the whole coil, the band spread condensers, which are ganged to the main tuning dial, consist of 0-30 pF. variables tapped across varying portions of the grid coils as shown in the coil table. Other methods could of course be used but the one shown is simple to adjust and gives no trouble.

COILS The second oscillator coil and the b.f.o. coil are both home-made and consist of electron-coupled oscillators using plenty of capacity for stability. Both tuning condensers consist of 465 Kc. padder condensers (variable) and run I believe up to about 800 pF.

The second oscillator coil contains 20 turns of 26 gauge d.c.c. wire wound on a 1¼" former, cathode tap is 5 turns from the cold end. The padder condenser is strapped across the top of the former with its adjusting screw upward and a hole is drilled in the coil shield to enable it to be reached by a screw driver for adjustment of frequency.

The b.f.o. coil is made in a similar manner but contains 90 turns of 30 gauge enamel tapped a quarter of the way up from the cold end. Of course a commercial unit could be substituted here, but personally I prefer if possible to make my own.

The coil table is probably remarkable for the variety of wire gauges used, but the wire used just happened to be that on hand. The aerial coils (L1 and L2) on 3.5 Mc. band are wound with a space of 1/16" between them; on 7, 14 and 28 Mc. bands the aerial coil L1 is wound as close to the secondary as possible. On 3.5 Mc. the primary L3 of the r.f. transformer is over-wound over the cold end of the secondary L4 and inter-wound on all other bands. Oscillator coils L5 and L6 require a little juggling with the spacing between them. If it is too loose oscillator stops, if too tight the oscillator will super-regenerate and cause birdies across the band. A lot will depend on the oscillator valve, both to its type and age. Close coupling between the aerial and r.f. coils may bring thoughts of lack of selectivity but selectivity is determined mainly in the i.f. stages and causes no worry.

It will be noted from the coil table there is no band spread on the 3.5 Mc. coils, both variable condensers are placed across the whole coils.

POWER SUPPLY This is external to the receiver proper and consists of a standard 385-0-385 volts 100 mill. transformer, 80 rectifier and a two section filter. If the receiver is to be used exclusively with a loud speaker, a single section filter may be enough, but for quiet listening with headphones the two section filter is essential.

The power supply was made separate mainly with the idea of removing a prolific source of heat, and secondly because there was not enough room on the chassis.

MECHANICAL DETAILS

In order to make a good job that would not fall apart, and at the same time be reasonably easy to work, the 17" x 10½" x 3" chassis was made of ⅛" aluminium. A rigid assembly is essential for the chassis if signals are going to stay on the nose. There is of course no reason why a modern steel chassis could not be used with equal results.

Mounted on the right hand corner of the chassis (as shown in the top view of the receiver) is the shielded compartment containing the whole of the first three stages of the receiver, namely the r.f., frequency changer, and h.f. oscillator. This is made of 16 gauge aluminium and divided into three compartments by baffle plates, and finished off by a well fitting lid. This shield measures 8½" long, 6" wide and 5" high; each compartment inside is 2¾" wide.

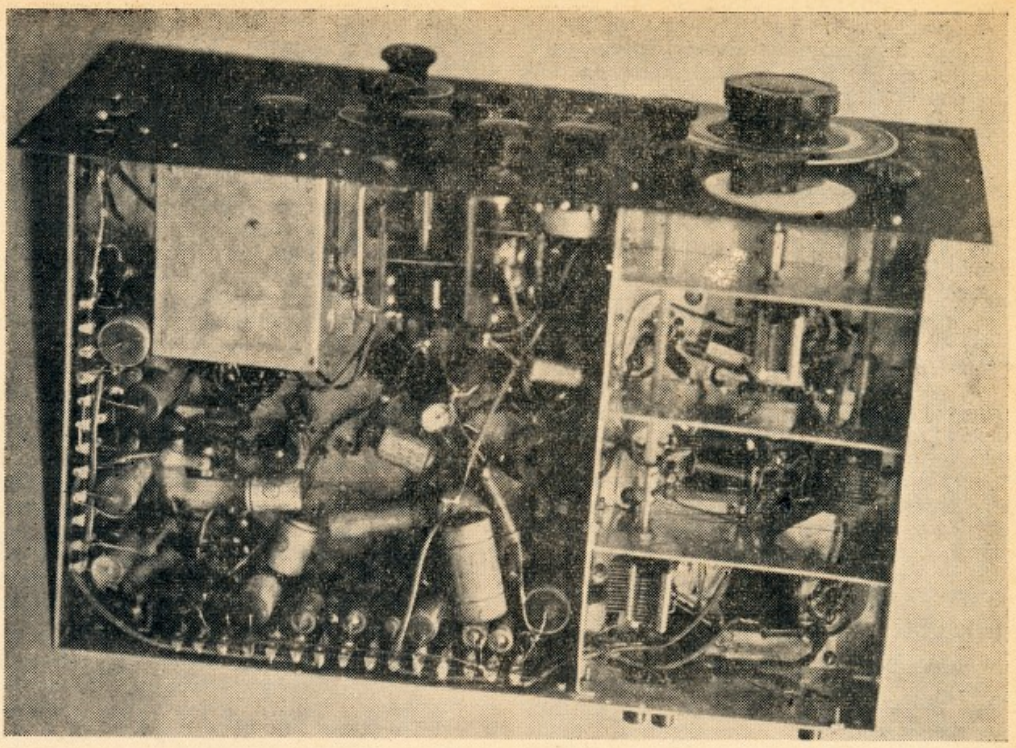
As shown in the under chassis view, each of these stages is shielded by cross baffles which also serve as mounts for the band-set condensers. Under-shielding is finished off by a cover plate which fits over the whole of the under shielding not shown in the photographs. Also in the under-chassis view is the bottom shield of the b.f.o. and second oscillator section, this is the almost square aluminium box visible about half-way up the panel. The panel by the way is a Trimax steel job 19" x 10½", finished in black crackle, very rigid but hard on the home builder's tools.

LAYOUT

The receiver controls as shown on the panel are bottom row (right to left): r.f. band-set condenser, oscillator band-set with dial and pointer, aerial band-set, r.f. gain control, audio gain control, speaker jack, noise silencer threshold adjustment, and phone jack. Above silencer control is the a.v.c. on/off switch and at extreme left two s.p.s.t. switches, b.f.o. on/off on top, and B+ on/off lower. The main tuning dial directly over the oscillator band-set condenser is an "Aegis." Although any smooth-running dial will be satisfactory, with the amount of band spread and tuning rate given in the receiver, about a 10-1 vernier drive ratio is ample; too high a ratio is not necessary. To the left of the "Aegis" dial is the EM1 magic eye and to the left of it above and below the selectivity control C25 and the phasing condenser P.C.

Reverting to the top chassis view, in the top right hand corner is the r.f. stage, followed by the converter stage (6SA7) and the h.f. oscillator (6J5). Along the back of the chassis the two square shield cans are the two 1600 Kc. i.f. transformers with the 6K7 i.f. amplifier between them. Following are the 6L7 second converter and the 6J7 noise amplifier, immediately in front of the 6J7 is the noise transformer, followed by the second oscillator shielded coil and the b.f.o. coil; each with their respective tubes to the right.

Immediately to the right of the noise transformer are two square i.f. transformers, these are the input and output



Underneath view of chassis showing R.F. sections and shielding also shield of B.F.O. at the left.

transformers for the crystal filter which is situated just in front of the two transformers, the only part visible in the photograph is the selectivity control condenser C25. Following the filter output transformer is the first amplifying valve (a 6K7 or 6U7G), a 465 Kc. transformer, the second amplifying tube and third detector (a 6B7S or 6G8G) with the last i.f. transformer on its left. The 6V6G output tube is immediately behind the third detector, and the EM1 mounting is shown just to the left of the 6V6G. The fixed condenser, visible between the EM1 and the i.f. transformer shield, is the 0.05 uF. between EM1 grid and earth. The 6H6 noise rectifier is the small metal tube between the crystal input transformer and the second oscillator coil can.

GENERAL DETAILS

As a receiver of this type is unlikely to be built by a beginner, no detailed description of the wiring will be given, the general layout is well shown in the photographs and can be followed easily. For the sake of later servicing most resistors and by-pass condensers of the i.f. stages and noise silencer are mounted on resistor strips running along the back and one side of the chassis. These can be wired up before they are actually installed and it is only a matter of a short connection between the strips and their associated valve sockets when they are actually bolted in. In this receiver when first completed, all except one or two condensers were on the strips. Changes made later account for the surplus components shown in the underneath view.

The crystal used is one working with an air gap, and care should be taken to mount it in a horizontal position, so that the gap will remain as a uniform gap. When first installed the one used was mounted vertically and caused many hard things to be said about the poor results of crystal filters, until it suddenly dawned on me that the crystal was supposed to work with an air gap that should stay put and not have the crystal moving round between the plates. So the mounting was quickly swung through 90° and all our troubles were over. However don't forget that sometimes the crystal gets dirty, just like the ones do in the transmitter and it may need a clean up now and again, especially if it is an open holder.

The coils in the original receiver are all wound on valve bases as they were the only materials available at the time, to avoid mistakes when plugging in, the oscillator coils are wound on 5-pin bases, and the r.f. and converter on 6-pin bases. However it would be better to use the modern Trolitol 1¼" formers for more than one reason. Firstly they are much better electrically, secondly the thermal co-efficient is much less than bakelite, thirdly they look better, and fourthly (this one is quite important) there is less risk of damaging the windings with continuous band changing. Six-pin sockets grip quite firmly and it is easy enough to pull turns off when changing bands in a hurry. Different bands can be colour-coded, with the oscillator coils given a distinctive marking in addition.

ADJUSTMENT

Lining up of the receiver is best carried out in stages as follows:—

1—Lower frequency i.f. stages.
2—High frequency i.f. stages.
3—Front end of receiver.
4—Noise silencer and crystal filter.

The lower frequency i.f., if used with a crystal filter, is best adjusted by wiring the crystal into a simple triode oscillator, the frequency of the crystal as an oscillator will be slightly different from its frequency as a resonator but will be accurate enough for the first line up; 45 volts or less on the plate will give ample output. For the 1600 Kc. stages, if no signal generator is on hand, an easy way out is to use a b.c. oscillator coil with a standard single gang condenser; this should go to round about 2000 Kc. and cover this section nicely.

Before lining up short out the crystal filter and turn the noise silencer control to maximum bias thus cutting out their two functions and leaving the set as a straight super without trimmings. Now proceed to line up the l.f. i.f. stages starting from the third detector stage and working forward to the grid circuit of the 6L7 second converter. It should be necessary to decrease the coupling between the crystal oscillator and the various stages as more stages are lined up. When all 465 Kc. stages are peaked as shown on the magic eye, set your signal generator (if you have one) or home-made oscillator on 1600 Kc. (you can check this frequency on most b.c. sets) and loosely couple the output into the grid of the second mixer. Now vary the condenser across the second oscillator tank starting from minimum until output is indicated in the EM1, then proceed to peak both 1600 Kc. i.f. transformers as above.

Now line the front end up either on a steady signal or one from a monitor or signal generator. When the receiver is working to your satisfaction at this point, line up the noise silencer, by pulling out the h.f. oscillator tube and feeding a 1600 Kc. signal into the first 1600 Kc. stage, via the grid circuit of the 6SA7, of sufficient strength to close the EM1. Turn the silencer full on, i.e. to the earthed end of the variable resistor R43 and peak the noise transformer by the MINIMUM output shown on the EM1; back off the silencer control until the signal comes up in the magic eye and re-peak the transformer. Continue this process until the transformer is right on the nose. In normal operation the silencer should operate with about an eighth of the silencer control cut in, if much more than this is used the gain ahead of the silencer is too great and should be cut down by increasing the bias on the 1600 Kc. amplifier. Too much gain here will cause blocking of the silencer and second converter on strong signals.

With the silencer operation OK turn the threshold control to the off position and adjust the crystal filter as follows: Plug the crystal filter back into position, and with the crystal still switched out, a clean signal is tuned in and peaked; and then the b.f.o. switched on and adjusted for the desired pitch of note. Tune the receiver through zero beat to approximately the same pitch on the other side, now switch the crystal in by turning the phasing condenser P.C. from zero, and adjust the phasing condenser until the signal is practically eliminated. The filter is now adjusted for single-signal reception, and with the exception of very strong or modulated signals it will be found that signals are only received on one side of zero beat. For c.w. work the crystal should be left in at all times, as in a crowded band it is easy to loose a weak signal if the filter is set after the signal has been tuned in. For phone work the phasing condenser is set at the point of maximum "hiss" noise.

In conclusion the 6L7 is replaceable by 6L7G and according to A.W.A. if they are unobtainable, a 6J8G can be substituted for the 6L7G without any change of socket connections; the connection to pin No. 6 being ignored and the valve treated as a 6L7G. The reason of course is that the 6J8G is really a 6L7G plus a triode oscillator. The 6SA7 may or may not need neutralising. In this receiver it was not necessary and it works as well on 28 Mc. as on 7 Mc. If required a very small condenser of 1 or 2 pF. between the control grid and the oscillator grid will do the trick.

The control knob to the left of the noise silencer control is not used at present, originally it varied the amount of b.f.o. voltage to the 6B7S but as this idea proved an unnecessary refinement it was cut out. It could be used for a variable condenser to give a variable beat note. The hole between the magic eye and the "Aegis" dial is the remains of another experiment now defunct.

A NEW CIRCUIT FOR A V.F.O.

CATHODE COUPLED OSCILLATOR

By Dr. A. F. TAYLOR*, VK3AT

In my case, use is made of an EF50 in the buffer stage, with an r.f. choke of 2.5 mH. in its plate lead, and this is capacity coupled to a 6V6, also operating in class A, with a coil of 70 turns, 34 s.w.g. enamel, on a ⅝" polystyrene form, shielded by an old i.f. transformer can. The tuning coil L1 consists of 15 turns of 22 s.w.g. enamel on a ⅝" polystyrene form, with an iron dust core fixed in the axis of the coil.

The condensers coupling the tuning unit to the valves in the oscillator are 3-30 pF. air trimmers. These are just the thing as their capacity can be readily adjusted to give greatest stability.

This circuit is very stable on the 3.5 and 7 Mc. bands, but does not oscillate readily in the regions higher than 10 Mc.

the coupling between the tuned circuit and oscillator valves is very small, 2 to 5 pF. In other words variations in effective inter-electrode capacities of the valves due to variations in plate voltage and tube heating have negligible effect on the frequency determining circuit.

A voltage regulator in the v.f.o. power supply is therefore not as essential as in most other types of oscillators.

The coupling between cathode of the cathode-coupled oscillator and the grid of the following buffer amplifier is a variable 3-30 pF. air trimmer. This is used at the smallest possible value to obtain reasonable output, to further help the electrical stability of the v.f.o. Also taking the output from the cathode helps this stability. Output may be

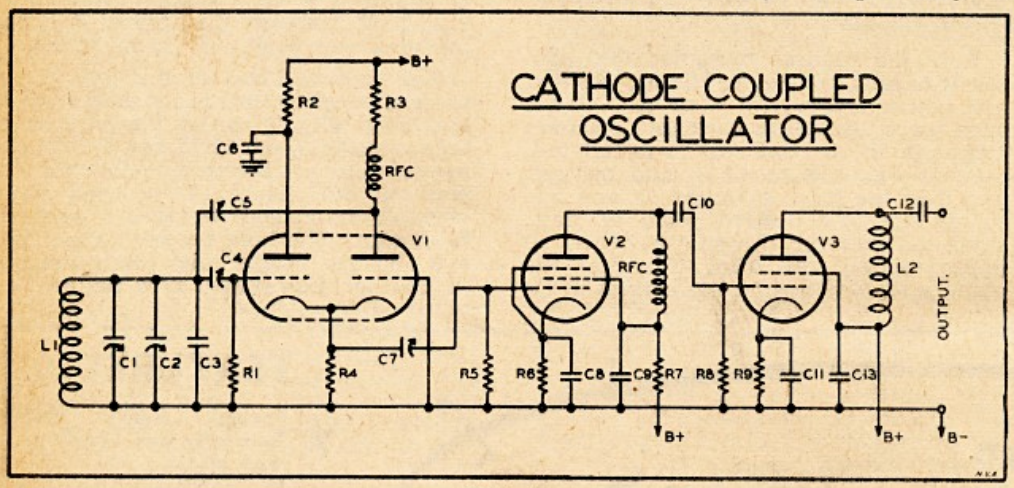


Fig. 1

C1—150 pF. variable
C2—50 pF. variable
C3—50 pF. mica
C4, C5, C7—3-30 pF. air trimmers
C6—0.1 uF. paper
C9, C13—0.01 mica
C8, C11—0.05 uF.
C10, C12—100 pF. mica
L1, L2—see text
R.F.C.—2.5 mH.
R1—100,000 ohms, 1 watt
R2, R3, R4—2,000 ohms, 1 watt
R5, R7—5,000 ohms, 1 watt
R6—150 ohms, 3 watts, wire wound
R8—330 ohms, 3 watts, wire wound
V1—6N7
V2—EF50
V3—6V6

This circuit is similar to the Franklin oscillator in some respects. It is a two terminal negative resistance type using two triodes, or a twin triode valve. One valve acts as a cathode follower amplifier and the other as a phase inverter.

The output is taken from the common cathode connection of the triodes. This circuit is not original and was shown to me first by VK3GU, who has tried it out, and it has some advantages over oscillators using single valves.

The dynamic stability is good, there is very little frequency drift during the warming up period after switching on, and variations in plate supply voltage of moderate amount do not affect the oscillator frequency. This is because taken from the plate of the second triode where slightly more i.f. voltage is available, although it may affect the frequency more.

The v.f.o. at the writer's station operates on 4.7 Mc. feeding a two stage transmitter, the first stage being used as a tripler, and the second as a straight p.a. for operation on 14 Mc.

Results have been good from the point of view of tone and stability of the oscillator, and as with other types of oscillators, mechanical stability is essential.

The values of plate dropping resistors are not critical and may be any value between 500 to 10,000 ohms or more, and need not even be equal. The cathode resistor used is 2,000 ohms, but again is not critical.

The v.f.o. should have its own power supply and 100 to 200 volts plate supply is needed. All three stages of the unit draw a total of 35 Ma., at an operating potential of 120 volts.

*112 Maude Street, Shepparton, Victoria.

QUESTIONS & ANSWERS

Following a suggestion by VK2ALR and others recently, a Questions and Answers column makes its debut. It is intended to act as a clearing house for your queries and also your knowledge and experience, and you are herewith invited to use its services.

If you have a question of a technical nature send it in to Q. & A. "Amateur Radio," Box 2611W, G.P.O., Melbourne, and if suitable it will be published in this column. If you can answer any of the published questions you are invited to send same to the above address. All such replies will be forwarded to the questioner (if he has sent a stamped addressed envelope of suitable dimensions) and also a summary printed.

We reserve the right to reject any question as unsuitable but apart from this, this column's operation is up to YOU. So let's have your queries. To start the ball rolling, here are a couple of things we would like to know.

Q. 1—What is the velocity factor of nylex twin power flex?

Q. 2—Why are filter chokes put in the high tension lead where the windings have to be well insulated from the core when it appears that they would work equally well in the return lead at approximately earth potential?

REVIEW.

MICRO-WAVE TECHNIQUE

R.S.G.B. Publication

This little booklet is a **must** for every Amateur's bookshelf. For a general guide to micro-wave equipment from the Amateur viewpoint it has no equal, both for the u.h.f. man and even more for those who would like to know just what goes on up there.

A description is given of the operation of each of the components which are in present use; cavity resonators, wave guides, aerials and radiators, crystal mixers and detectors, and the various types of tubes; klystrons, travelling wave tubes, lighthouse triodes, magnetrons, etc. No mathematics, no formulae, but after perusing Micro-Wave Technique one has a very good idea as to which frequency these gadgets work at, their power, and their usefulness to the Amateur.

No specific circuits for Amateur transmitters or receivers are given, purposely since at present all work has to be done with equipment which is round and about. However a chapter describes the sort of set-ups which would be suitable and this should give some ideas to those who are interested.

Definitely great value for its small cost.

A KILOWATT FOR YOU!

E. A. CHARLES, * VK5YQ.

Yes sir, one thousand little watts. all together, and just where you want 'em! Nothing new—you've read it all before, but did you think about it?

Recall how you've marvelled at the way a certain few W6 stations push your S meter over when the band is only fair? They run 1 kilowatt though, you say, and have a three element beam. Yes, but if they were operating under your transmitting conditions, they would need an input of 20 kilowatts to shoot over the same signal! And do you ever think of the thousands of W stations you've never heard, and are not likely to ever hear?

This way you will comply with para 91 of our Handbook and save many a faithful 807 from an untimely demise, not to mention the coal shortage.

How?—simply by using and concentrating a few of the many db's. that are going to waste. When you want to read in bed you don't try it by moonlight. And when you ring the YL over trunk lines, you don't sing or recite your 88s—you want her to hear you, and hear her say she will QSL.

So, firstly, your modulation. Programme compression of 3 db. is common broadcast practice—it is as effective as doubling the stations power. There is a circuit in the 1947 A.R.R.L. Handbook that given 25 db. of clipping of speech peaks. It is generally accepted that the average level of modulation on speech is 30% when the peaks reach the 100% modulation level. (What yours reach is often discussed.) In round figures, the difference in input level to increase from 30% to 100% modulation, is 4 db. Fifty per cent. to ninety per cent. is a rise of another 5 db. in input level, a further db. bringing up 100% modulation.

If you can accomplish 7 db. of compression, you have a power gain of five times. Your 100 watts are equal to an input of 500 watts without compression.

Now, let's work on it. The maximum possible gain from a two element beam is 5.7 db. (radiator and parasitic director, tenth-wave spacing—"QST". April 1947). Up to 7 db. with a three element, to 9.7 db. from a wide-spaced four element beam. However, let's assume you get, in practice, a 5 db. gain over an ordinary half-wave antenna. That is a power gain of three—your 500 watts have now become equal to an input of 1,500 watts. Settle for two-thirds efficiency—you have 1 kilowatt in anyone's language!

Well, what are you wasting time for? The cost—for compression—another tube or two and a few bits. The beam yes, a few quid, depending on how far you have deteriorated in that services-acquired habit, "scrounging."

However, a certain amount of time and hard work are required, to make the compression/clipping behave, and to properly adjust the beam. The first is very necessary, the latter very desirable. Neither are greatly involved or complicated.

There are some who will say it takes the fun out of the game—like shooting rabbits by using telescopic sights. But maybe you, too, are fond of roast rabbit. Don't expect miracles, though—you'll learn a lot by listening. And don't be surprised when you see the local QRM at work next day, and he tells you he collected a couple of new countries the night before (with his full wave zepp and 20 thin watts). You'll notice he looks a little haggard though, and has difficulty in keeping his eyes open. Of course anything goes with wide open conditions, if you wait for the competition to go to bed and the band is really wide open. After all 12 db. is but two S points!!!

*193 Young Street, Unley, South Aus.

QRP OPERATION

BY R. J. WHYTE*, VK2AHM

For the benefit of those interested, the writer outlines hereunder equipment used during recent successful tests on 28 Mc. Power input to the final stage was varied from 4 watts to 0.2 milliwatts.

Transmitter.—6K7GT e.c.o./c.o., 6K7 GT doubler, HY60 final, plate modulated by battery powered 1J6G operating in Class B, percentage of modulation being somewhat restricted by method of application (normal method of modulating both plate and screen could be applied to advantage—Ed.). For QRP operation the gain control is simply turned back to the proper setting for correct modulation level.

Aerial System consists of series of 14 Mc. vee beams arranged to provide low angle radiation in selected direction. Seven wires, 272 feet long, radiate from central pole 45 feet high, to the perimeter poles 12 to 15 feet high. Wires are of 12/14 s.w.g. galvanised wire and spacing is approximately 51.5 degrees. All feeders enter the shack as a cage and are spaced 4" apart. Required two wires being selected by flexible leads. Feeders are tuned, using either series or parallel arrangement and are about fifty feet long. The system as a whole works very well on both 28 and 14 Mc.

*Willow Point Station, via Wentworth.

Power Supply.—6 volt vibrator supply providing 25 Ma. at 160 volts was used for normal operation. Vibrator unit was provided with taps for QRP operation.

Results achieved have been most gratifying; but in many cases do not agree with VK3CO's "Story of the Decibel" (details of contacts submitted by the author reveal that unknown and unpredictable factors involved precluded accurate comparison—Ed.).

SHORT CIRCUITS

SIMPLE BUT EFFECTIVE KEY CLICK FILTER

After listening to the large number of stations radiating key clicks these days, the simple but effective filter which I use may be of some help to those seeking a remedy.

Secret of the system is the use of a **wet electrolytic** condenser. A dry type has been tried with negative results.

I have keyed final amplifier centre tap, buffer cathode, and crystal oscillator cathode with the same results.

The family b.c.l. set aerial is connected at one end to the same mast as the transmitting aerial, and no trace of clicks are evident in that receiver.

The 8 uF. electrolytic is connected directly across the key contacts with the positive side to cathode of the keyed tube, and the audio chokes placed in each lead. The leads from the cathode to key are in shielded wire and earthed.

The chokes do not appear critical as the ones in use at present are the audio chokes found in old fashioned receivers.

If you connect the condenser back to front or use a "sick" condenser, current will appear as though the key was closed.—VK2QL.

MOTOR FOR ROTARY BEAMS

VK5SP has found a use for the 24 volt motor generators which are part and parcel of a lot of disposal equipment, particularly i.f.f. gear. The field windings are disconnected from the 24 volt driving armature and connected in series with the 240 volt winding. With these connections one has a motor which with suitable gearing, will turn a beam using either 240 volts a.c. or even 300 volts d.c. from the normal power supply. Current is about 40 Ma. using d.c.

D.I.G.

VK3QO, our scribe for Fifty and Up, having the doubtful advantage of having an illegal broadcast transmitter in close proximity, came home to find press photograthers busily engaged snapping his poor old 50 Mc. folded dipole from various angles, under the impression that they were getting a real pukka scoop photo. He had to disallusion them, of course. The same night, 12 midnight to be exact, more pressman, more photographers, more annoyance. What he would like to know is who sent them to VK3QO. Anyhow fellows if there are no more 50 Mc. notes, you'll know VK3QO is in a quiet location, NOT working DX!

FIFTY AND UP

Compiled by VK3QO, to whom all contributions can be sent

What, no DX? Well, hardly any, apart from a contact between VK5GB and VK2AGS at 9 p.m. on 13/5/48, signals were not so good due to QSB, etc. 5RT also contacted 2AGS that night and again on 14/5/48 at 10 p.m.

VK3RR has been hearing a station on 52 Megs in the wee sma' hours of the morning (midnight onwards) during the end of April and beginning of May. Signals were in and out, never strong, apparently an automatic CQ going with occasional speech with non-VK accent; beam was pointed just East of North.

VK3CI, operating from Mt. Fatigue near Foster on 9/5/48, again worked 7AB across Bass Strait. Signals were not so good this time due to rain or something in the flight path.

It is reported by 3PG that W6UXN heard a VK5 date unspecified (but about beginning of May) about 6 p.m. our time.

COMMERCIAL HARMONICS

We are subjected (quite rightly) to continual reminders about harmonic radiation from Ham Stations. Why is it then that VHNQ can continue to run their rig in such a poor manner that numerous spots occur in the 50 Mc. band? It would not be so bad if one could identity it, but as it is one has to wait hours before any call sign is given. Why can't they give their call sign say every quarter of an hour?

VK3 FIELD DAY

The 50 Mc. Field Day on 9/5/48 was rather restricted this time; only 3CI, 3UI, 3DI and 3US/3VL were out, though 3RR took his receiver to Ballarat, no room for his transmitter in car.

3US/3VL were at Arthur's Seat. Rex and Gwen used their usual portable with 5 watts to a 6V6 final. They worked all portable stations and 3HK, 3AT, 3PG, 3BD, 3ABA, and 3GE fixed portable at Frankston. They made some interesting antenna tests using the beam at various heights and it appears that with a very low aerial signals disappear in some directions only.

3ABG used his new mobile rig consisting of a v.f.o., doubler into doubler into 832 doubler into p.p. 807s. Modulation was f.m. secured by loop modulating the v.f.o. Power from Type 3 Mark II. power pack. Receiver was converter into two i.f's. into super regen and audio. He worked 3PG, 3UI, 3HK, 3ABA and 3HT from the top of the Divide near Pretty Sally Hill. Rig was vertical rack and panel and looked nice; aerial was half wave.

3UI, with friend 3APF, worked from Mt. Mayor (350 feet), near Dookie, where they heard Melbourne stations up to S9. Their greatest surprise was their contact with 3CI at Foster, there being plenty of mountains in the stretch of 150 miles between them. 3VL, 3ABA, 3HT, 3ABG, 3PG and 3HK were also worked. No dope to hand on rig used.

VK4 FIELD DAY A WASH OUT

The "Grand Field Day" set down for the 1st and 2nd of May was washed out due to heavy rain, and was held on the following Sunday. 4ZU and 4XG operated from Maleny, 4RT from Tamborine Mountains and 4DQ from Mt. Kynoch, Toowoomba, with 4LN in Gympie and the Brisbane gang operating from home QTHs. Nothing was heard of the Bundaberg crew although 4XG and 4ZU had their beams aimed north quite a bit. Signals between 4RT and 4ZU-4XG on 144 Mc. (Tamborine to Maleny) were R9 plus plus. Don't know whether the distance (85 miles) constitutes a record at present? 4DQ and 4XG-4ZU Toowoomba-Maleny, were S9 plus on 50 Mc. 4DQ was pleased with the performance of his four element array, a duplicate of the one in use by 4ZU on 50 Mc. also. The following Brisbane stations were contacted on either 50 or 144 Mc.: 4HR, 4RL, 4AW, 4KB, 4RY, and 4TY. Signals on 144 Mc. were heard in Ipswich (20 miles west of Brisbane) by 4CH from the following: 4TY, 4HR, 4XG and 4ZU. Contacts were made by 4TY and 4HR from their home QTHs but although the Maleny men were heard, 4CH could not be heard up there. In view of the good prizes to be won it was surprising that more stations did not participate.

5GF GOES MOBILE

From 5QR via 3YS we learn that 5GF has installed a mobile rig in his waggon, and on the 5/5/48 made a trip to Gawler, about 25 miles from Adelaide, and gave the boys a running commentary on the trip. They QSOed him right into Gawler, but when he (5GF) arrived at 5AX's place (at Gawler) Adelaide signals dropped out, evidently due to surrounding buildings, although the Adelaide boys could still copy 5GF, in fact 5RT, using a vertical antenna, got him S7. 5GF's rig was crystal controlled, about 25 to 30 watts input to 807 on phone, 6J6 converter to car radio for receiver and a vertical co-ax. dipole antenna. Most of the Adelaide boys were using horizontal antennae but they still seemed to get through OK. He also made a trip to the Adelaide hills and signals were S9 plus. Stations on included 5GL, 5GB, 5KG, 5HD, 5QR, 5RT and 5JD.

ACTIVITY IN VK6

6FC and 6GB have both been putting good signals into Bunbury, apparently for quite some time, but it was only recently that they have actually been heard. 6GS, with friend Rollo Evringham, took the latter's converter and receiver to the hill behind the High School, and heard the above call signs at S5-6, a distance of 97 miles. Same weekend 6LW took portable to Mandurah and worked 6GS at Harvey and 6FO and 6GB in Perth, but signals not too good due mainly to very heavy QSB.

May 1st saw the opening of 144 Mc. band with five stations—6GB, 6DF, 6FU, 6KW, 6LW and all there dead on time. An enjoyable night was spent by all (especially 6LW), whilst the other four were using SCR522s from their home QTHs. This promises to be a very popular band and we hope to give news of some further contacts next month. May 9th 6KW's signals were heard by 6AG at Darlington, a distance of 15 miles. This is the record in VK6 up to the time of writing.

144 Mc. DIGEST

From Bill Hartley

Proceedings in the 144 Mc. spectrum now in use are very interesting as somehow this band seems to be a very clean one, that is devoid of harmonics and also to date aircraft flutter effects. Working conditions seem to be superior to the old 166 Mc. band in that signals are stronger than of yore, probably due to the change over to horizontal polarisation. Some signals are weaker during daylight operation and until time and experiment provides the answer, it can only be conjected that location, time and weather conditions play their part.

There is no doubt that a horizontal array certainly provides a greater signal intensity and would be more the logical medium for use on field days and point to point communication than as at present. The working of local contacts can be well provided for by vertical polarisation. The happy medium can be attained where both forms of antennae could be used, the vertical as a scouter or the means of having a quick look around the band, and the horizontal providing a strong directional signal where needed. Rotating the beam to all points of the compass and, at the same time, carrying out a clean sweep of the band at each compass setting is found to be slow and laborious. As things stand quite a few stations are missing out through being outside the main lobe of the beam. Cross polarisation is also bound to occur, and can be overcome, once the signal is found, by changing over to the appropriate antenna.

Activity for the month showed that the old 166 guard are slowing marching into place, the two stalwarts in VK3 in 3ACM and 3EM are now making the pace for their second hundred contacts via the v.h.f's. 3EM is running 20 watts to the modified SCR522 plus a receiver of the same tribe. 3AKI opened on the new band with a new shack and a new signal from a pair of CV6s p.p. osc., 6V6 modulator, 10 watts. 3LH makes himself heard with a mod. osc. using p.p. VT90s, rated input is 4 watts!, together with a 9002 super regen. Similar type of outfit is in use at 3HE, who in making his debut is making himself heard well even with 3 watts.

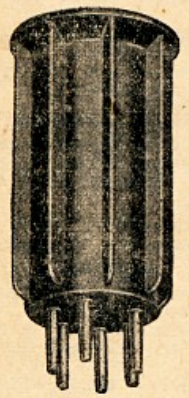
3CI at Foster now on 144.1 Mc., working on Sundays from Mt. Fatigue, will be a valuable link on field day operations. Gear in use is a SCR522 with 10 watts; coupled to either a Franklin series phased array or the six element wide spaced stacked beam. 3TO is another newcomer to the v.h.f. and for the present is using a modified BC624 at 15 watts and a 9002 super regen to a simple horizontal dipole. 3ABA/3YS are on 144 Mc. also now using same rig as that on 166 Mc. Antenna is a horizontal three element beam and a.s.v. receiver. They have had a few QSOs and find the band busy. Bill Hartley gave them very acceptable assistance in erecting their beam which is on top of their 50 Mc. beam 35 feet high.

Things are booming in VK2 at present according to 2VW, where the following are active: 2VW, 2BZ, 2WJ, 2ACL, 2AHG, 2DF, 2PF, 2LZ, 2AFO, 2NO, 2NQ, 2MQ, 2UV, 2ABB, 2OC, 2ADT and 2RU. 2VW is on the job with 15 watts input to a SCR522 transmitter in to a four element horizontal beam and receives on a AR301. 2LZ up at Wentworth Falls in the Blue Mountains is understood to work a 80 mile hop to 2ADT at Cessnock. 2VW's beam must be f.b. as his signals find their way into 2OC's (of Wyong) indoor antenna. 2KI still interested in radio-controlled model aircraft.

144 Mc. activity in VK4 started off with a great burst of activity, the only casualty being poor old 50 Mc., which is somewhat neglected at the moment. However with the mid-winter peak in sporadic E approaching we may enjoy a little Interstate DX 'ere long. Most of the locals are using SCR522s for transmitters and quite a few for receivers also. 4 and 6 element beams are popular as antennae and signals across the town have been extremely good. 4ZU tried out the 16 element beam described in the Handbook and as the book says it yielded a "performance which is truly outstanding." 4TY at Manly, some 8 or 10 miles out of town, is a very handy link—something we never had on "6."

The fifth district is slow on making the new band, this no doubt due to much 50 Mc. tests. 5JD has a most interesting transmitter with a 6AC7 c.o., sixth harmonic output, tripling with p.p. RL7s driving a 832; both 5RQ and 5RV have been on as well.

ACHIEVE THE HIGHEST POSSIBLE WORKING STANDARD WITH FAMOUS EDDYSTONE COMPONENTS



Low Loss 6-Pin Coil Formers

THREADED or PLAIN RIBS

These 6-pin coil formers, which are identical with those used for "Eddystone" coils, are made of DL9 material and have eight ribs, the outside diameter being 1½ inches, with a winding length of 2⅛ inches. The threaded formers are cut 14 turns to the inch.

Cat. No. 537 Plain Formers 5/3

Cat No. 538 Threaded Formers 5/11

EXTENSION CONTROL OUTFIT

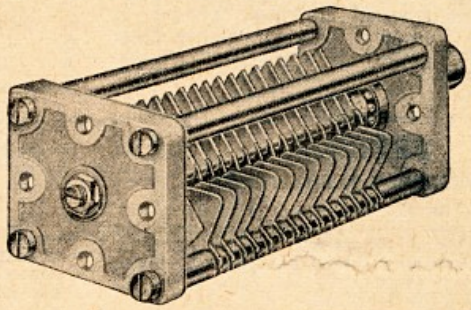
The insulating portion of this outfit is made from precision drawn paxolin tube of high quality which cannot warp or bend. The length of the insulating part is 4", while the ¼" brass insert is 3" long, giving ample scope for length adjustment. A panel bush and nut are supplied in brass, ⅜" outside diameter.

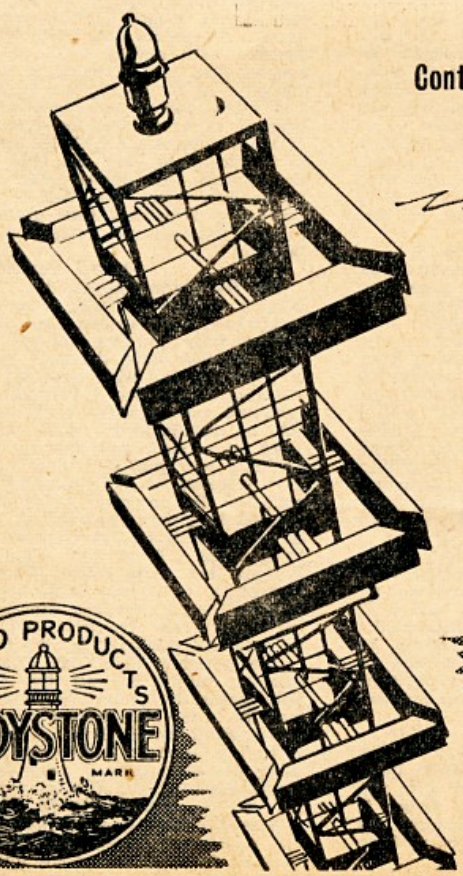
Cat. No. 1008 . . . . . 4/4

Bandsetting Condenser

This component, which has been specifically designed as a band-setting condenser for use in conjunction with Cat. No. 580 as band-spreader, is fitted with a "Clicker" Device which gives ten linear increases in capacity up to the maximum of 140 pF. Construction is of heavily silver plated brass, the vanes being soldered to their supports, and the end plates are ceramic. Single hole mounting.

Cat No. 607. (Arriving).





Contact your local Distributor for all EDDYSTONE Components
—also Catalogues and Descriptive Leaflets

DIRECTORY OF DISTRIBUTORS

- VICTORIA: J. H. MAGRATH & CO. 208 Little Lonsdale St., Melbourne
- N.S.W: JOHN MARTIN PTY. LTD. 116-119 Clarence St., Sydney
- Q'LAND: CHANDLERS PTY. LTD. Cnr. Albert & Charlotte Sts. Bris.
- WEST AUST: CARLYLE & CO. LTD. Hay St., Perth & 397 Hannan St., Kalgoorlie
- S.A: GERARD & GOODMAN LTD. 192-196 Rundle Street, Adelaide
- TAS: W. & G. GENDERS PTY. LTD. 53 Cameron Street, Launceston

Australian Factory Representatives:

KEITH HARRIS & CO. PTY. LTD. 51 WILLIAM ST., MELB. Tel. MB2119

RADIO PRODUCTS EDDYSTONE TRADE MARK

EDDYSTONE OFFERS YOU THE LATEST, *MOST DEPENDABLE* COMPONENTS for FM., AM., & PULSE

FEDERAL, QSL and DIVISIONAL NOTES

Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.
Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.
Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.
Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; **Newcastle:** E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; **Coalfields and Lakes:** H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; **Western:** G. J. Russell, VK2QA, 116 Bogan St., Nyngan; **South Coast and Tablelands:** R. H. Rayner, VK2DO, 42 Pettit St., Yass; **Southern:** E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICTORIA

Secretary.—A. B. D. Evans, VK3VQ, Box 2611W, G.P.O., Melbourne, Telephone: FJ 6997.
Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.
Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; **Western:** C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** B. Sectrine, VK3BI, 17a Raglan Street North, Ballarat; **North Eastern:** D. Tacey, VK3DW, 18 Harold St., Shepparton; **Far North-Western Zone:** Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; **Eastern Zone:** J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7190 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Spot frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.— G. G. Augustesen, Box 638J, G.P.O., Brisbane.
Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.
Divisional Sub-Editor: H. T. MacGregor, VK4ZU, "Moquet," Eildon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.
Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.
Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.
Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.
Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.
Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.
Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

FREQUENCY ALLOCATIONS

As mentioned in the Editorial in this issue, certain new frequency allocations have been made as a result of Federal Executive's negotiations with the P.M.G's. Department. Listed below are the bands that may be used as from the 1st June, 1948.

3.5 to	3.8 Mc.	A1, A3.
7.0 to	7.2 Mc.	A1, A3.
14.0 to	14.4 Mc.	A1, A3.
26.96 to	27.23 Mc.	A1, A3, FM.
28.0 to	30.0 Mc.	A1, A3.
50.0 to	54.0 Mc.	A1, A2, A3, FM.
144 to	148 Mc.	A0, A1, A2, A3, FM, Pulse.
288 to	296 Mc.	A0, A1, A2, A3, FM, Pulse.
576 to	585 Mc.	A0, A1, A2, A3, FM, Pulse.
1345 to	1425 Mc.	A0, A1, A2, A3, FM, Pulse.
2300 to	2450 Mc.	A0, A1, A2, A3, FM, Pulse.
5650 to	5850 Mc.	A0, A1, A2, A3, FM, Pulse.
10000 to	10500 Mc.	A0, A1, A2, A3, FM, Pulse.
21000 to	22000 Mc.	A0, A1, A2, A3, FM, Pulse.
30000 and higher	Mc.	A0, A1, A2, A3, FM, Pulse.

ANNUAL REPORT

The following is the President's report submitted to the Easter Convention of the W.I.A.

First of all, as you are no doubt aware, most of the time has been occupied with the finalising of the Federal Constitution under which we are operating, and I would like to see a hearty vote of thanks recorded to Alex Clyne for the work he has done in this direction. He has put many hours of work into this onerous job and I feel sure he must be very glad that the task has come to an end.

During the year we have undertaken the printing of membership and Contest Certificates. Although the previous Convention only requested membership certificates, we felt it was necessary to furnish certificates for the 1946 and 1947 Contests, as we have had many enquiries from overseas stations and our prestige was at stake. Whilst they are possibly more expensive than was first anticipated, we had quite a number printed which should last for about two or three years and possibly longer. We asked during the year for an advance from Divisions to defray expenses and we had a favorable response from most of the Divisions. The actual amount requested from each Division was based upon approximate figures of membership in the Divisions. In the case of VK3 we asked for £25, VK2 £25, VK4 £10, VK5 £20, VK6 £15, and VK7 £5, a total of £100, the estimated cost of the Certificates. Actually the cost was a few pounds more than that figure. On the present per capita basis for Divisions, the amount requested would now be for VK3 £43/10/-, VK2 £29/10/-, VK5 £18/5/-, VK4 £10/10/-, VK6 £7/15/-, and VK7 £5, a total of £114/10/-. We think we can reasonably expect the two Divisions who have not forwarded the amounts requested, to send them in the near future.

Post Master General's Department

Our relations during the year have been most cordial with the Department and a mutual spirit of co-operation has resulted from all our negotiations with them. We have recently supplied a table of our eventual frequency requirements to them, and as a result of our discussions with them has come the release from 1st May of the 144 to 148 Mc. band. The table covers all our requirements in frequencies and not overlooking the types of emission anticipated. There are several other matters in regard to regulations on which discussions are still taking place. During the year, after many initial setbacks, we obtained an amateur licence for the National Expedition ship, the "Wyatt Earp" and the unusual call sign, VK1AA. I feel sure that our endeavours as far as Federal Executive is concerned, will be amplified in the course of the Convention.

Federal Executive Administration

The volume of work of Federal Executive has tended to increase during the year, and some idea of the actual extent may be gained when it is mentioned that the Federal Secretary handled 539 separate communications in addition to the minutes of 18 Executive meetings. Meetings have been necessary fortnightly to cover the large volume of work entailed. In connection with negotiations with the P.M.G's. Department, Divisions should realise that a great deal of time is necessary to enable discussions to be held with those officers. Some preliminary work has been completed on the filling in of Contest Certificates which seems like becoming a major task. Quite a deal of administrative work may be obviated by prompt replies by Divisions to correspondence.

Technical Development

As regards the technical committee, the Executive has directed its forces on the Constitution and on the discussion of a technical programme, and it is felt that as so much time has been spent on the first subject encouragement should be given to articles in the Magazine on new techniques, and we should develop that programme to a more practical state in the task of preparing a companion publication to the Handbook.

Defence Radio Reserve

As Mr. Marshall, who has been co-opted by the Federal Executive, will attend with Wing Commander Reddrop, of the R.A.A.F., he will give you the latest developments in that regard. Suffice is to say here that progress is very satisfactory, and when details are finalised, Divisions will be notified.

I.A.R.U.

The various issues of the I.A.R.U. Calendar have been reprinted in "Amateur Radio" generally in full and occasionally in abridged form. News letters to the Divisions on current happenings were issued to December, but thereafter there was so little additional news to that coveyed by letter by the Federal Secretary, that they were discontinued.

Federal QSL Bureau

The Bureau, except for one brief period during the year on a matter of finance, functioned very smoothly and a total of 65,469 cards were handled for the 11 months, or an average of 6,000 per month. It appears that cards handled through this Bureau, will always total at least 75,000 per annum. The cost of handling the cards mentioned amounted to £5/10/7½, or a trifle over twopence per 100 cards and is only one-tenth the expense of Overseas Bureaux. The low cost may be attributed to the re-directional facilities used by the Manager. It is considered that the time is appropriate for the Federal QSL Bureau address to be altered to 23 Landale Street, Box Hill, E.11, Vic., to enable the heavy despatches from overseas to be directed to the Manager and avoid consequent choking of the Box.

Federal Contests

The DX Contest appeared to be a great success, judging by the favorable comments received from everywhere, and the fact that some 100 logs were received from VKs and 200 odd from overseas. The C.W. Sections were the most popular, the number of phone entries being most disappointing and the receiving section poorly patronised. The prizes were good and some very fine equipment was made available by manufacturers. Some prizes held over from 1946 were made available for this Contest. The publicity was good and most countries were aware of the Rules. It is regrettable that the R.S.G.B. published the incorrect Rules. A number of late overseas logs were received and it is suggested that in future contests, the time for them be extended by a month. There were some suggestions by VK stations that some official Government Bureau be approached to donate some tokens, representative of Australia, to overseas winners. This would not only add to the incentive and interest but would be excellent publicity for the Contest.

The National Field Day Contest was almost a complete failure as only two logs were received. Considering the amount of portable equipment that must be in use, the lack of interest is disappointing and difficult to explain. Adequate publicity was given in "Amateur Radio" and over Divisional stations, and the apathy is regrettable and suggestions for popularising the Contest would be welcome.

Federal Traffic Channels

Schedules have been maintained on an average of two nights per week, and the total number of contacts for the year were 364. N.S.W. Division maintained the most consistent schedules during the year, but a big improvement can be made in the

keeping of schedules generally. It is thought that this improvement could be achieved by having a standby operator for each Divisional Traffic Manager. Interference has been another source of worry, but if some plan is evolved for schedule keeping this difficulty may be overcome.

"Amateur Radio"

The Federal Executive has maintained contact with the Editor of the Magazine during the year and very good co-operation has been achieved. The campaign for the technical development of the Institute has already been dealt with, and this will be done through "Amateur Radio."

Finance

The Treasurer's report is appended, and it is becoming increasingly obvious that the present capitation fees are not sufficient to meet Federal expenditure. This will form the subject of some discussion during this Convention.

General

One of the points of some concern during the year has been the slowness with which we have received ratification of the resolutions of the last Convention. It was with this idea in mind that we will request each Delegate to deposit with the Secretary his instructions for voting on the various items, so that in future the minutes of the Convention will show the Division concerned which items they must ratify. A progressive year of endeavour is expected both with the Divisions and the P.M.G's. Department.

CONVENTION MATTERS

It was resolved at the 1948 Annual Federal Convention that anyone requiring a copy of the Federal Constitution, should make application through his Divisional Secretary for same.

Another matter of perhaps greater importance, is that of the large number of commercials appearing on our bands. It behoves every Amateur hearing and able to identify any part or distinguishing characteristics of such transmissions to report same to his Divisional Secretary who will forward this information to Federal Executive for collation and submission to the P.M.G's. Department. Only by such concerted and individual effort can we hope to keep our channels clear of these commercial "pirates." Let's have that dope, fellows.

A matter of some concern and universal import is the interference, in some cases unwittingly, being caused by Amateurs to the Official Broadcasts of the Divisions and also to the Federal Traffic Network. These services are for your benefit—keep those channels clear. In the near future, a revised list of times and frequencies will be published. Note well, and help us to help you.

DX C.C. LISTING

Applicants for the DX C.C. should make sure that the cards submitted show all details of confirmation of the QSO. By so doing they will save themselves possible disappointment. It is also recommended that one or two cards over the bare hundred should be submitted. Who is going to be the first to make Phone DX C.C.?

PHONE

Nil

C.W.

VK3CN	108	(3)
VK2EO	103	(7)
VK3EK	102	(10)

OPEN

VK3BZ	122	(5)
VK2DI	117	(2)
VK3HG	112	(4)
VK3KX	106	(1)
VK3MC	106	(6)
VK4HR	101	(9)
VK2ACX	100	(8)

Figures in parenthesis indicate membership number to DX C.C.

Please note that the only official changes to the Countries List as printed in February 1947 QST are:

Isle of Man	GD
Lebanon Republic	AR8
Pakistan	AP
San Marino	

The following changes have also been made to prefixes of various countries (subject to further change when the Atlantic City determinations take effect):—

Andaman & Nicobar Is.	VU5
Austria	MB9, OE
Basutoland	ZS4
Corsica	FC
Cyprus	MD7, ZC4
Dodecanese Islands	SV5
Eritrea	MD3, MI3
Egypt (& Suez Canal Zone)	SU, MD5
Iraq	YI, MD6
Korea	HL
Laccadive Islands	VU4
Libya	MC1, MD1, MD2
Maldive Islands	VS2
Marshall Islands	KX6
Somaliland, Italian	MD4
Syrian Republic	AR1

CONTEST NEWS

Two further logs for the last Australian DX Contest have been received.

HH2CW	882 Points c.w.
HP4Q	84 Points c.w.

The first post-war Trans-Tasman Contest is over, and although not a great number entered, those that did had a good time. This contest illustrated the need for a universal type of exchange of serial numbers. Some confusion arose due to the fact that the ZLs also had a contest running on 3.5 Mc., and were using our DX Contest type of serial exchange. The yardstick of success of these Contests depends on the logs that are sent in—please send in your log even if you only had a few contacts—they assist in the checking also!

FEDERAL IONOSPHERIC AND TROPOSPHERIC SERVICE

A Federal Ionospheric and Tropospheric Sub-Committee has been formed and consists of Messrs. Oliver Moriarty, Doug Anderson (VK3ZW) and Neil Smith (VK3YY). This committee has undertaken

WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE

Statement of Receipts and Payments for the Year ended 31st March, 1948

RECEIPTS

Balance in Bank, 1st April, 1947				£33	0 8
Per Capita contributions from Divisions					
Queensland	£12	9	0		
New South Wales	37	2	6		
Victoria	79	15	0		
South Australia	22	11	8		
Western Australia	6	10	0		
Tasmania	5	3	0		
				163	11 2
Sale of Lapel Badges:—					
New South Wales	£6	18	6		
Victoria	44	13	9		
South Australia	20	14	9		
Western Australia	6	18	6		
Tasmania	5	5	9		
				84	11 3
Certificates:—					
Queensland	£10	0	0		
New South Wales	25	0	0		
Victoria	25	0	0		
Tasmania	5	0	0		
				65	0 0
Contra Account—Victorian Division				15	0
				£346	18 1

PAYMENTS

Convention Expenses:—					
Minutes	£10	10	0		
Expenses		18	9		
Advance W.A. Division A/c. Expenses	20	0	0		
				£31	8 9
Lapel Badges				81	2 6
Certificates:—					
Competition Prize	£2	2	0		
Certificate Design	8	8	0		
Printing	100	13	0		
				111	3 0
1947 Contest:—					
Printing	£1	13	6		
Postages	3	2	0		
				4	15 6
Typewriter overhaul				6	10 0
Fees:—					
Renewal Code Address	£2	2	0		
Licence for Station VK3WIA	1	0	0		
				3	2 0
QSL Bureau Expenses				7	0 0
Printing and Stationery:—					
N.S.W. Constitution	£3	3	0		
General	4	15	9		
				7	18 9
Petty Cash, Postages and Telegrams				11	17 11
Miscellaneous Expenses:—					
Entertaining J. M. Dobbyn	£2	18	0		
Cheque Books		10	0		
				3	8 0
Refund advance by Victorian Division on A/c. W.A.				20	0 0
Contra Account—Victorian Division				15	0
				£289	1 5
Balance—Cash in Bank, 31st March, 1948				57	16 8
				£346	18 1

(Sgd.) P. EVANS, Honorary Treasurer.

I have examined the Cash Book, accounts and vouchers of the Federal Executive of the Wireless Institute of Australia for the year ended 31st March, 1948, and have obtained all the information and explanations requested. In my opinion the within statement correctly sets out the financial position of the Federal Executive as at 31st March, 1948, and the transactions for the year ended that date.

(Sgd.) F. K. HELSHAM, A.F.I.A., A.C.I.S.
25th March, 1948. Honorary Auditor.

to publish a chart which will give ionospheric predictions for all Australian States in addition to countries for each month. Weekly alterations will be sent via Federal Traffic Channels each Friday night in sufficient time for promulgation over the Divisional Stations during the Sunday morning broadcasts.

Dr. A. L. Green, head of the Ionospheric Prediction Service in Australia will provide the information and this Committee will be responsible for its dissemination.

AMATEUR CALL SIGN AMENDMENTS AS AT 1st MAY, 1948

Alteration in Call, Address, etc.

VK2AJE—B. L. Mills, 57 Salisbury Rd., Rose Bay.
2AQJ—G. A. Ahlstrom, 23 Manchester St., Dulwich Hill, N.S.W.
2IQ—F. R. Treharne, 23 Badgery Ave., Homebush.
2MC—W. R. Attwood, 126 Denison St., West Tamworth.
2QA—G. J. Russell, 116 Bogan St., Nyngon.
2ZB (in lieu of VK3SF)—N. C. Hannaford, 91 Parramatta Rd., Concord.
VK3ACW—C. W. Welch, Bank St., Avenel, Vic.
3ARW—A. R. White, 89 Ballarat St., Hamilton.
3CJ—C. J. Manning, Unwin St., Templestowe.
3HI (in lieu of VK4LR)—L. G. Reynolds, 9 Darling Rd., East Malvern, S.E.5.
3LL—L. E. Mahony, O.T.C. Radio Station, Ballarat Rd., Braybrook.
3YO—C. Woodward, Gabriel Ave., East Malvern.
VK4BJ—J. G. Brown, 48 Lamb St., South Bundaberg, Qld.
4CS—R. M. Cameron, Kerry Rd., Archerfield.
VK9YY (in lieu of VK7YY)—W. W. Watson, O.T.C. Radio Station, Wewak, T.P.N.G.

New Issues

VK2AQQ—W. W. Turnbull, 11 Ellalong Rd., Cremorne.
2ATS—T. R. Stockman, 17 Avern St., Inverell.
2MZ—Hurstville District Amateur Radio Club, C.W.A. Rooms, Forest Rd., Hurstville.
2OK—G. H. Vardy, 2 "Lancia" Flats, Wingewarra St., Dubbo.
2UK—G. E. Dennys, "Bradfield," Maranar Rd., Towradgi via Corrimal East.
2VE—E. W. Bierre, 12 Malpas Court, 26 New South Head Rd., Edgecliff.
2VH—A. J. Ward, 120 Gipps St., Woolongong.
2VZ—Dr. F. W. Ross, 188 Brisbane St., Dubbo.
VK3AFM—G. C. Billings, 8 Munro St., Armadale, S.E.3.
3AJF—A. J. Forster, 46 Maude St., Geelong.
3OK—J. T. Pease, c/o. "Kavon Downs," Diggers Rest.
3SF—R. Garth, 1 Margtmary Ave., Preston.
3TV—A. C. Styles, 45 Brisdale St., Maffra.
3VE—V. W. Harrison, 55 Mountain View Rd., North Balwyn (Portable).
3VU—R. G. F. Gatt, 138 Swallow St., Shepparton.
3WC—P. J. Grigg, 3 Philpott St., Geelong East (Portable).
VK4CF—G. G. Cairns, 11 Vulture St., West End, Brisbane.
4GW—J. Worth, 17a Rowland St., Bundaberg.
4FA—A. Field, A.W.A. Aviation Section, Garbutt, Townsville.
4GM—G. W. Mullins, M.V. Idle Hour, Smith St., Deagon.
4JA—J. T. Marston, Orana St., Belmont.
4MD—M. M. Dwyer, Yarrabin St., Coorparoo.
4MG—L. G. Merchin, Hillier St., (P.O. Box 58), Richmond, Qld.
4RA—R. A. Stephens, Coortharaba Hill, Gympie.
4ZI—B. D. Woods, Coastal Radio Station, Thursday Island.
VK5CA—B. W. Austin, 34 Fisher St., Fullarton.
5FJ—F. L. Johnson, 11 Clifton St., Maylands.
5GO—E. L. Willoughby, c/o. W. Thomas, 40 Fairford St., Unley.
5GS—G. E. Mathews, c/o. 5AU, Anstey St., Port Augusta.
VK6NC—N. C. Craigie, 71 McKenzie St., Wembley Park, W.A.
VK7KB—Dr. I. R. Pearson, 3 Amy St., Burnie, Tas.
7MI—G. A. Mottershead, Macquarie Island, Antarctic Expedition.
VK9BB—W. Bruce, Murray Barracks, Three Mile, Port Moresby, T.P.N.G.

Correction.—VK5LU was wrongly stated in the new call sign list as belonging to C. S. Schick. The correct call for this station is VK5JP.

HAMS WHO LOST THEIR LIVES DUE TO SERVICE

VK2AJB—G. C. Curle	R.A.A.F.
VK2BQ—F. Easton	R.A.A.F.
VK2JV—C. D. Roberts	A.M.F.
VK2VJ—V. J. Jarvis	R.A.A.F.
VK2YK—W. Abbott	**R.A.A.F.**
VK3DQ—J. D. Morris	A.M.F.
VK3HN—J. McCandish	A.M.F.
VK3IE and VK5EM—J. Mann	R.A.N.
VK3NG—N. E. Gunter	M.N.
VK3OR—M. D. Orr	R.A.A.F.
VK3OW—G. L. Templeton	R.A.A.F.
VK3PL—J. L. Colthrup	R.A.A.F.
VK3PV—R. P. Veall	A.M.F.
VK3SF—S. W. Jones	A.M.F.
VK3UW—J. A. Burrage	R.A.A.F.
VK3VE—J. E. Snaddon	R.A.A.F.
VK4DR—D. Laws	A.M.F.
VK4FS—F. J. Starr	R.A.A.F.
VK4PR—R. Allen	R.A.A.F.
VK5AF—C. A. Ives	R.A.A.F.
VK5BL—Brian James	R.A.A.F.
VK5BW—G. Phillips	A.M.F.
VK6GR—A. H. G. Rippen	R.A.N.
VK6JG—J. E. Goddard	R.A.A.F.
VK6KS—K. Anderson	A.M.F.
VK6PP—P. P. Paterson	R.A.A.F.

We are indebted to VK2ALX, VK2HZ, South Australian Divisional Council, and VK6AH for some corrections and alterations to the above list.

We wish to finalise the list of names above within the next month as the Perpetual Trophy for the Remembrance Day Contest is to be inscribed with the above list of names. Please send any information, changes to above list, etc., to Federal Secretary, Box 2611W, G.P.O., Melbourne, at the earliest.

FEDERAL QSL BUREAU

RAY JONES (VK3RJ) MANAGER

Harry Paston (W2OAA), 226 Colignl Avenue, New Rochelle, N.Y., U.S.A., requests that any station who contacted him when he was W2OAA/J8 in 1946 and who did not receive a card for the contact should drop him a note to the above address and the card will be forthcoming by return mail.

Recently in Melbourne as a member of a visiting "Fortress" from the Phillipines, one of the pilots paid a return visit after an absence of several years. He was formerly a W8 but now takes a hand in running KA1AA along with other Hams. Official duties and the shortness of his visit to Melbourne prevented his attendance at any Divisional meetings.

Further word from Jim Wetherell (G5UB/P) indicates that the recent fire on the "Wairuna" did not damage the radio equipment. However owing to the slow turn-round of the vessel at terminal and other ports it is at the moment doubtful if the Company will schedule the vessel for a further trip to Australia.

A bundle of cards came to hand from CT1JS, who many VKs worked pre-war. Most of the cards however relate to post-war contacts during 1946 when prior to the restoration of licenses in Portugal our friend was active as 1JS without any prefix.

The I.A.R.U. have given notice in March "QST" that the special endorsement for W.A.C. on 28 Mc. either phone or c.w. will be withdrawn as from 30th June, 1948. The I.A.R.U. feel that there is now no need for special encouragement for Hams to use the 28 Mc. band. In lieu however, a special endorsement for W.A.C. 50 Mc. has been instituted. Who will be the first VK applicant?

An interesting QSL in that of ZC1AL, the station of the Arab Legion, with QSL address stated as Post Office Mefraq, Transjordan. The card supplies the following information: "Transjordan became an independent kingdom ruled by H.R.H. King Abdullah in 1945" and therefore ZC1 stations cannot be accepted for B.E.R.T.A. and W.B.E. Certificates. The Arab Legion is the National Army of Transjordan.

Following are some DX QTHs that have come to hand:—

FK8AB—John Duplat, Noumea, New Calendonia.
EK1TF—Herb Plummer, Box 57, British P.O., Tangier.
MD7DA—D. MacDonnell, Cyprus Sig Sqn., M.E. L.F. 3.
ET3AF—Harry Dell, Box 858, Addis Ababa, Ethiopia.
VS9ET—Eddie Cary, R.A.F., Sharjah, Trucial Oman, Arabia.
YJ1AB—P. C. Eedt, Vila, New Hebrides.
VP2GB—G. Evans, Box 62, St. Georges, Grenada, B.W.I.

NEW SOUTH WALES

NORTH COAST AND TABLELANDS

2ON moved to Dapto sent the rotary beam by train; the best Lindsay, this zone is listening for you. Kempsey kept going by 2KN, 2ASF and 2GH. 2AEY holding the fort at Taree works 7 and 14 Mc., and has a c.r.o. in action; runs 100 watts to p.p. 834. 2WQ and 2JC both active on 7 Mc. 2ATS has new antenna with good results. 2UN thinking of going to 28 Mc. and planning new antennae.

2JK lost amongst the 14 Mc. DX, getting his share too; who said he couldn't work DX through that line noise. 2ZX back from VK6 and on again with nice solid phone on 7 Mc. 2SH has new folded dipole and mike. He has been having many a late session while the XYL is away. 2PA enjoyed Ham hospitality whilst in Sydney recently, met about 50 Hams in all.

NEWCASTLE

2ADX has three elements going nicely on 28 Mc. 2AKP was so impressed that 28 Mc. is next for him. 2XQ of c.w. fame is on phone, 10 watts of it, an 813 to follow. 2ANG about to cut fractured section out of 7 Mc. rock, hence nil heard of him on 28 Mc. 2TE also with three elements on 28 Mc. and plenty of DX. 2AFS tuning up 28 Mc. beam, good re-

sults with Telcon and tee match. 2CS on last lap now, building transmitter, all else ready for big switch.

2AGY cleaned up modulation troubles and preparing a 28 Mc. beam. 2BZ most impressed with v.h.f's. and doing good work. 2AHA keen as ever and works all bands in between straightening out club rules and regulations. The Newcastle Radio Club was formed on 23rd April. 2AGD experimenting with crystal filters when not DXing on 28 Mc. 2FP still looking for eight more countries to make up 100 post-war on 28 Mc. with 35 watts, using the same 807.

COALFIELDS AND LAKES

2AMU on 28 Mc. regularly, DX no trouble. 2RU a sticker on 50 Mc. with a new beam. 2AEZ heard chasing the elusive stuff on 14 Mc. 2TX, of Wyong, is making a comeback and was heard on 28 Mc. 2JZ another O.T. on 28 Mc., so guess Alex will shortly make the v.h.f's. 2TY using vee beam on 28 Mc., look for him on 144 Mc. also. 2KR chews it on 7 Mc.

2KZ nears his 28 Mc. phone W.A.S., 40 confirmed all with 25 watts and two tube blooper!! Three elements on 28 Mc. is under way. 2XT has nice gear and pole erected for beam. 2PZ busy on 7 Mc. when time permits. 2MK nil to report. 2YL not too active, chiefly trying two half waves in phase on 28 Mc. 2ADT going higher now on 144 Mc.; hearing 2LZ and 2FI from Mountains; 90 up post-war on 28 Mc. phone.

SOUTH COAST AND TABLELANDS

Signs of activity are great in Woollongong, many new stations making their appearance. The Wollongong Amateur Radio Club is in full swing with 2AIP as President, 2MT Vice-President, old "2CJ" Treasurer, 2WV Secretary, 2UK Publicity. With 38 members the Club is helping Woollongong's radio enthusiasts into the Ham ranks. 2MU building 100 watts to p.p. 807s, a v.f.o. to come along shortly. O.T. 2WP is back again with a Type A Mark III 2WP, 2GG and 2DO were all in the same unit during the fracas. 2AGZ has 12 tubes of double conversion under way; lost his 8JK in a wind storm recently.

2LA been in Woollongong some time—wall papering only allows a little time on 7 Mc. c.w. Reported 2ON also migrated to the 'Gong; enough down there for a nice field day. 2PI, at Canberra, with a noise silencer that does work; has QRM from 2k.w. in same room, 10 k.w. from 2CY 200 yards away and 200 k.w. two miles away, what a QTH!! 2JQ using a command transmitter as v.f.o., and was recently heard from 2NS whilst visiting Bathurst. 2JM, Canberra, on 7 Mc. with 7 watts to 6A6 and five tube super. Also active in A.C.T. are 2GU, 2PM, 2TV and 2AGG but no news.

2OY, Goulburn, and 2AJS, Junee, active. 2PN, 2TA, 2TC, 2AKE not heard during last month but the guess is they are building for 14 Mc. 2ALS on 7 and 14 Mc. and doing nicely with lower power rig. 2OW, Temora, using a No. 11 but bigger things being planned. 2AIK, West Wyalong, has dipole and v.f.o. completed, the latter allowing Cess to move away from the crowds. Thanks to 2UK and 2JM for news. 2DO on 7 Mc. for any zone news.

SOUTHERN ZONE

2VK busy servicing, but will be into the QRM shortly. 2EU almost finished new rig, rack and panel; not so fortunate with the house project. Now that the 55 feet tower is upright 2OJ needs a little patience and dural tubing to finish the job. 2QD back in Albury from rural life. 2QE is on the way with three stages finishing with 807, may be a little time yet. 2APW building new oscillator in between junior QRM. 2JA erecting full wave job for 7 Mc. 2ANQ with toil and other hobbies is very busy. Notes from other towns to 2OJ please.

VICTORIA

At the May general meeting of the Division a lecture on Radio Frequency Heating was delivered by Mr. J. W. Bayliss, B.Sc. Mr. Bayliss, who has only recently arrived from England to work for Australian General Electric Co., displayed a detailed knowledge of his subject and stimulated much discussion. A film strip (with recorded sound effects) was shown, dealing with the fundamentals of electronic frequency changing, particularly in so far as radio frequency heating was concerned.

Apparatus for eddy current heating using low frequencies of the order of 500 Kc. and for dielectric heating using high frequencies of the order of 30 Mc. was illustrated. Using eddy current heating of conductors, skin effects become useful, and it is possible to heat treat the wearing surfaces of components such as gear wheels without affecting the toughness of the underlying material.

On the other hand, dielectric heating is useful in applications where the material (necessarily a dielectric with high loss factor) is heated uniformly throughout its mass. A common application is in the heating of plywood during the glueing process. Important problems are introduced into r.f. heating by changes in the electrical characteristics of the load as it warms up. In order to keep the load on the r.f. source constant, either the frequency must be varied or if crystal control is used then automatic motor tuning of the load circuit must be resorted to.

A keen interest was shown by those present in the problems of r.f. heating, and this was amply demonstrated by the numerous questions directed to the lecturer.

VICTORIAN QSL BUREAU SERVICE

The following information will be of interest to Victorian Amateurs:—

OUTWARD.—Bring your cards into the General Meeting OR Post to Outwards QSL Manager, Mr. F. O'Dwyer, 190 Thomas Street, Hampton, S.7. Price is ½d. per card. Cards to VK3 are free.

INWARD.—Collect cards at the General Meeting OR supply Inwards QSL Manager, Mr. G. Roper, 26 Lucas Street, Caulfield, S.E.8, with stamped addressed envelopes.

VICTORIAN DISPOSALS COMMITTEE

On Saturday and Sunday, 8th and 9th May, the Disposals Committee held another of their distributions (the last at the Batman Avenue Depot) which was considered by members to be very successful, particularly considering the large quantity and variety of equipment handled.

Although there are still more items to come for List No. 1 (all who still have SCR522s and AT5/AR8s on order will receive them), those who attended were able to take part in the distribution of many miscellaneous items, many of which were very popular and should be available again in the future, if members advise us that they require similar items.

Zone Disposals Representatives, acting on behalf of their members received very fair treatment, being in every case afforded first choice and/or a separate allocation based on the ratio of country to city membership. The result was that on the average the country member received exactly the same amount per head as the city member.

On a Zone basis the comparative amounts per member were as follows: City £1, North Western £2/5/-, North Eastern £1/18/3, South Eastern £1/12/3, South Western 9/8, Central Western 1/10 (there are separate arrangements being made for the Far North Western members because of their small membership and great distance from Melbourne). We thank those Zones who co-operated with us and helped to make it a success, particularly those Zones which kept their members fully informed regarding the information passed on to all Zone Secretaries by this Committee. One Zone, however, did not co-operate and, in addition, made false statements over the air, both before and after the distribution, which if spread would make it impossible for more equipment to be obtained both for all Victorian and Interstate members. We repeat our request not to pass on over the air any rumours or gossip you many hear, contact either your Zone Disposals Representative or this Committee to get the true facts.

Now that samples of a wide variety of items have been distributed, please write in to us and let us know of your future requirements, but owing to the large amount of work involved we regret that we cannot reply to individual letters, but we do want the reaction of members as a whole to this new type of distribution.

T.A.C. ACTIVITIES

Receiver Group.—At the April meeting of the Group Mr. Charles Quinn spoke on the possibilities of Amateur experimentation using home-built test equipment. Amongst the equipment demonstrated to the meeting were a multivibrator, vacuum tube voltmeter, transitron oscillator, signal tracer, and a valve tester.

T.A.C. General Meeting.—This meeting is devoted to general business. At the April meeting it was decided to proceed with VK3WI transmissions using the 3.5 Mc. band. When this service commences, the Sunday broadcast will be radiated on 3.5 and 7 Mc. simultaneously.

The Committee approved of the purchase of the following new book for the lending library:—"Radio Handbook" (U.S.A.) 11th Edition.

V.H.F. Group Meetings.—At the May meeting further general discussion took place on the question of vertical versus horizontal polarisation for antennae in the new 144 Mc. band.

At the June meeting, Mr. C. W. Rollan, of the P.M.G's. Department Research Staff, will give a lecture and demonstration on a subject of great interest to v.h.f. experimenters. Full details of the programme for this meeting will be given in the Sunday morning broadcast from VK3WI.

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on 15th July, 1948. Lectures are held on Monday and Thursday evenings 8-10 p.m. Persons desirous of being enrolled should communicate with the Secretary Box 2611W, G.P.O., Melbourne; Phone FJ 6997 from 9 to 5, or the Class Manager on either of the above evenings.

CENTRAL WESTERN ZONE

It may be of interest to zone members to know we have 27 members in the zone, of these approximately 28 are active, and the remainder are associates. It is a surprise to count the numbers up, especially after the number of regulars who turn up for the zone hook-up. We welcome to the zone three new and active members: 3TY, Rupanyup; 3?? Minyip (call unknown); and 3ARM of Serviceton North. Hams just seem to be popping up everywhere these days.

The normal zone hook-up took place on Sunday, 9th and eight stations reported in, control station was off the official frequency of 7050 Kc. owing to a striking crystal, however the 7120 Kc. used seemed to be a much clearer spot, and will be used in future. Our apologies to 3XC and 3AGR, who were missed at control. Just a point chaps' when calling into the hook-up don't call the control station six times and sign once as by that time somebody else has finished calling, signed off, and been missed, please mix the calls on a one by one basis.

Our old friend 3IQ has an excellent transmitter of very high IQ. Kevin called 3XC per land line the other day, "please listen for my 100 watts on 14 Mc.," says he. Bill listens very hard and hears nothing, down goes the beaut receiver to 7 Mc., Bill listens again and has the speaker almost dislocated. Kevin puts mitter back on to 14 Mc.; Bill, being a cunning bloke, leaves his receiver on 7 Mc. and still 3IQ rolls in. Don't know how you do it Kevin, but most transmitters change frequency when the dials are twiddled. 3TY is up to his ears in the joys of d.c. supply, and tickled pink the way the voltage goes up and down, never a dull moment. However Bill puts out a f.b. sig with four watts input.

3ARM coming over well with a modified FS6, but thinking of higher power. 3GN is the proud owner of a "Kingsley" 50 Mc. converter, but up to date nothing has disturbed the calm of 50 Mc. in Ararat. 3XC and 3AGR were welcome strangers to the hook-up; were mixed with the hook-up times, but should be right now. 3HL is still welding and working on the beam, what a worry these windmill towers and 14 Mc. beams must be. 3YW is having another burst of 50 Mc., and has re-built the receiver. Is looking forward to the visit of 3IV to Joel Joel shortly. Next hook-up will be on Sunday, 13th June, at 10 a.m. on 7120 Kc.

EASTERN ZONE

The Eastern Zone hook-up on Sunday nights at 2000 hours E.A.S.T. is proving very popular and some excellent discussions take place. Most of the stations taking part have now got crystals for the spot frequency—3650 Kc. It is to be hoped that more of the zone members will join in the hook-up or at least let us know what they are doing both on and off the air. The majority of the members of this zone are either actively engaged in the radio trade or farming pursuits with a few public servants, etc., tossed in.

3AEP is a dairy farmer who gets plenty of DX on 14 Mc. with a Type 3 Mark II. 3AJL spends 40 hours a week with the P.M.G. and the rest of the time plays about with an FS6. 3ANC is a newcomer who puts out a nice signal on 7 Mc. Spends some of his time working at the local milk depot. 3ALS is active also on 7 Mc. and keeps the local picture theatre going. 3BB is active on 7 Mc. and comes on 3.5 Mc. occasionally, but so far we do not know what else he does. Believe he also grinds his own crystals.

3DI lives with radio night and day. Has built up some very fine gear. Also makes recordings and is another who keeps the local picture show going. 3HZ is a busy man and besides keeping the local B class station on the air, finds time for QSOs on 50 and 3.5 Mc. 3IO has put in an appearance on 7 Mc. again. Hope hear more of you in the future. 3PR breeds Jerseys in his spare time and is active on 7 and 3.5 Mc. with a Type A Mark III. and getting out well. 3QZ is a very busy man with the S.E.C. Is putting out very fine signal on 3.5 Mc. with Type 3 Mark II. 3SS is another who lives with radio day and night. Is doing a good job with the bushfire network.

3TH is another new Ham who milks cows for a living and is putting out a very nice signal on 7 Mc. with 12 watts to an 807. 3WE besides running the local paper and printing QSL cards, does some radio service work also. Bill gets out well on 7 and 3.5 Mc. and delights in telling the gang how many degrees below freezing point it is in Omeo. 3AEP also a man on the land. He fattens cattle for the Melbourne market. Is doing well on all bands with an AT5/AR8. 3LV using QRP on 3.5 Mc. and gets out well. He teaches the local children their ABC. 3VL Rex and XYL Gwen (3US) are both very active on all bands including 50 Mc. They grow apples and put them in cool stores. 3VG and 3GO have been threatening to come on the air. The local "Regional" must keep them too busy. Well gang that is the lot for this month. Please let your correspondent know what you are doing so that we can keep the Eastern Zone on the map.

T.A.C. MEETING NIGHTS

It is noted that the Technical Advisory Committee of the Victorian Division of the W.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:—

1st Tuesday: Practical Work.
2nd Wednesday: V.H.F. Group.
3rd Tuesday: T.A.C. General Meeting.
4th Tuesday: Practical Work.
4th Wednesday: Receiver Group.
5th Tuesday: Practical Work.

VK3WI will announce the programme for these individual meetings in forthcoming broadcasts.

NORTH WESTERN ZONE

The two main topics of interest here are plans for the forthcoming Convention and the Disposals handout. By informal discussion between our members and also our intending visitors from the Eastern Zone it now seems likely that our annual Convention will be on Saturday and Sunday 28th and 29th August.

3BM's XYL, who is all enthusiastic after her visit to the Eastern Zone Convention, has offered the gang the use of the 3BM home for our Convention. The novel idea is that the whole gang sleep there dormitory barracks fashion overnight, with unlimited opportunity for rag-chewing and general good-fellowship. Members of three other zones have expressed their intention to attend.

When at the last minute 3HR's arrangements fell through, 3BM had an unexpected and opportune business trip to the city, so took zone secretary 3OA and a 15 cwt. trailer which they loaded down to the axle with AT5/AR8s, A.C.Us., SCR522s, I.F.Fs., generators, etc. With all that gear stacked in his junk box, Bruce feels fairly confident of visits from zone members in the near future!

Associate Wally Loveland never does things by halves. Ex-radar expert and now electrical engineer at Quambatook, he decided to get his ticket and just lived, ate, slept and dreamed morse, technical and regs for a month, then sat for and passed the

A.O.C.P. Congrats Wally! When the licence arrives he will be ready to go on the air, and he'll be a great asset to our zone. Another keen associate is J. P. Troy, of Kerang, whom we expect to go for the ticket soon. He is taking a correspondence course. Ian Templeton 3AIT has joined our hook-up with nice phone.

3ACE has nice speech quality phone on low power from the d.c. mains. 3CH has at last made a comeback with clear phone. Alf is owner-operator of the Birchip town d.c. supply, so he can't pass the buck if the voltage goes down while he's on! 3LU has modified his FS6 for 3.5 and 7 Mc. and now joins in our hook-ups. Operates from a spare room at Wally Loveland's. 3TI has built a new multi-purpose frequency meter with all mod. cons. His 28 Mc. rotary is ready to erect, but plans to have it up by (not at!) the next Convention. 3CE has waited so long for the AT5/AR8 that he just can't believe it now it has arrived. 3HR is extremely busy at his job so not on the air much. There was nearly a domestic crisis at 3OA when the XYL thought the new aluminium front panel would make an f.b. oven slide! 3BM came upon an AR7 and Bendix frequency meter. Says he is not interested in further disposals gear. Probably because he's now broke!

SOUTH WESTERN ZONE

The Convention, held at Ballarat on 10th April, was opened by 3AMP who greeted those present, and was pleased to say that the attendance was the greatest of any post-war Convention. Those present were VKs 3AMP, 3AGV, 3KV, 3AL, 3ZL, 3BE, 3UT, 3BU, 3GR, 3IC, 3WT, 3APG, 3VA, 3HW, 3SE, 3ALM, 3ASV, 3DS, 3WN, 3AJR, 3BI and associate members Brian Stares and Alan Blomeley. 3AMP appealed for more members to put in an appearance in order to keep the interest in the zone alive and to get zone members to know each other better.

During the discussion following the reading of a letter re Disposals distribution it was the general opinion of those present that VK3WI could have been used to broadcast at intervals the fact that there had been a breakdown of arrangements.

Owing to lack of notification, the DX Contest as arranged at Warrnambool fell through and it was the outcome of general discussion that a DX Contest would be held commencing on the King's Birthday week-end. Details are as follows: Contest will be held on 7 Mc. phone and c.w., and will commence at 12 p.m. Saturday and will conclude at 12 p.m. the following Saturday. VK4, VK6 and Northern Territory will count as DX phone contacts. Scoring will be five points phone, one point c.w. Continents will be used as multiplier as per A.R.R.L. list. An 813 will be first prize.

3AJR then donated an 832 for 144 Mc. trophy, so at the next Convention an 832 and an 813 will be awarded for the greatest distance worked on 144 Mc. inter-zone. 3KX moved that at the next Convention a competition be arranged for the most neatly constructed piece of equipment to be judged by ballot of all members present. 813 will be the first prize, 0-50 Ma. meter second prize (donated by 3KX).

At this stage discussion was re-opened on zone hook-ups and as an outcome 3GR moved that zone hook-ups be at 10 a.m. on first Sunday in each month instead of 10.30 a.m. as at present. The merits of 7 or 3.5 Mc. was discussed at length and on a show of hands it was decided to retain 7 Mc. as the band for zone hook-ups.

It was agreed to ask VK3WI to operate nearer the high frequency end of the band (7 Mc.) if possible in order to reduce QRM.

The secretary was asked to write to W.I.A. to suggest that something be done to increase the country coverage of VK3WI. Perhaps a 3.5 Mc. transmission or relay if possible.

The next Convention will be at Geelong, 6th November, 1948. Election of office-bearers for the next 12 months resulted in the following: President, 3BI; Vice-Presidents, 3ASV and 3BU; Secretary and Treasurer, 3BE; Committee, 3AMP, 3UT and 3IC.

A visit was paid to the various Ham stations on Saturday afternoon and on Sunday the boys visited 3BA' studio and transmitter where 3AL gave a very excellent description of the workings of a commercial station. All present recorded a few words on the wire recorder, and strange to say practically everyone called CQ or is it so strange!!

QUEENSLAND

Owing to the absence of President 4AW at the general meeting held on Friday, 28th April, the chair was occupied by Vice-President 4VJ who certainly showed evidence of being cut out for the job. Mr. F. Nolan (4FN) gave a resume of doings at the Convention and Secretary 4XG read through the list of agenda items indicating as he went how the voting had gone. As 4FN's term as interim Federal Councillor had expired nominations were called for a new Federal Councillor and the following were nominated: MacGregor 4ZU and F. Nolan 4FN.

The Secretary informed the meeting of the proposed morse class to start on the following Friday evening and asked those who would be willing to lend a hand to let him know. Several members offered assistance and 4PR and 4AO were detailed to take the first class. The affair received an unexpected boost at this stage when Mr. W. Argeat (4KH) offered to place at the Institute's disposal an automatic keyer for class instruction. Needless to say the offer was accepted with alacrity and a vote of thanks was moved to 4KH for his gesture. Mr. G. Barr who learnt his code from the machine testified as to its effectiveness. The first class was availed of by some 20 odd members.

4XG outlined the proposed field days. The first being a v.h.f. event to be held on the first week-end in May. Unfortunately, owing to some torrential rain the event could not be held, the roads from Brisbane being blocked. The following Sunday yielded glorious weather however and the following went out: 4XG, 4RT, 4DK and 4ZU. For more details see "Fifty and Up." The low frequency field day will be run on the King's Birthday week-end in June and will be restricted to portable operation. The radio trade very generously donated some excellent pieces of gear for use as trophies, half of which is to be awarded for each of the field days.

We had the pleasure of a visit from the W.A. Secretary Mr. W. Coxon during April and in a flying visit to various shacks in the company of 4RT he met 4KB, 4HR, 4ES, 4AW and 4ZU. We were interested to hear of activity in VK6, particularly in the methods of running general meetings where the idea apparently is to keep all proceedings as short as possible and so make for greater variety and thus cater for all tastes. It would be interesting to hear members' views on this point here in VK4. In the opinion of the writer a lot of the time at general meetings is devoted to matters which could be left to Council to deal with.

4WI has added 144 Mc. to its frequencies for the Sunday broadcasts, making 7, 14, 50 and 144 Mc. channels available for coverage. 4AO raised a point at the general meeting as to the possibility of 28 Mc. transmission but 4FN, the operator of the station, explained that skip and variable conditions rendered the band unsuitable.

The "Food For Britain" donation box, kindly donated by Mr. F. Barraclough, duly made the rounds and yielded several pounds to the cause.

Disposals stocks have been, or will by the time this appears in print, exhausted and at the present time no information is available as to the likelihood of more being available.

SOUTH AUSTRALIA

The monthly general meeting for May was held on Tuesday at 17 Waymouth Street when Mr. Hal Austin (5AW) was the guest speaker, choosing as his subject "The Theory and Practice of Transformer Construction." The lecture was short and to the point, everyone present agreeing that lectures such as this given by a practical man who knew his subject, were always well worth listening to. A vote of thanks proposed by 5TR was received with acclamation.

Hal dealt at length with the various types of laminations, the various methods of insulation, and realising that the members were more interested in data, etc., associated with the construction of transformers, he gave on the blackboard a typical example of a Ham "tranny," and designed it theoretically, starting from scratch. This explanation (although we have all read the same thing in the handbook, etc.) was much better appreciated when given in such a practical manner. Hal also mentioned that "Radio News" for June, July and August contained an article which gives some of the most comprehensive data and instruction on transformer construction that it was possible to secure. The lecture closed with question time, and judging by the number and variety of the questions asked, the lecture was appreciated by all present. Just in closing, the various exhibits were returned OK, but they seemed to linger an unnecessary long time in the vicinity of 5WM.

A reply was received from Darcy Hancock (5RJ) accepting the position of country representative on the Council, although no mention was made of supplying any country notes. What about it o.m.?

No reply as yet from Frank Miller (5BF) regarding his acceptance of the position of country reporter. Can it be that the art of criticism is easily attained but seldom lived up to?

One of the important things dealt with at the Council meeting for April was the suggestion by 5BF that apparently (judging by the VK5 notes) the Sub-Editor did not know that country Hams existed and that more country news should be included in the notes. The "crack" concerning not knowing of the existence of country Hams was passed over (all the Council members being gentlemen) but all present, including the Sub-Editor, were in complete agreement as to the inclusion of more country news. The Sub-Editor explained that as he was not a "so and so" magician and could not be expected to conjure news out of his hat (even if he possessed one) and without the co-operation of the country members themselves, no news would be available.

The further suggestion from 5BF that there was plenty of news available by listening on the various Amateur frequencies was pushed overboard when the Sub-Editor said that as the job of gathering in the news was purely a voluntary one, he had plenty of more important things to do. It was finally decided that as 5BF had raised the question, he would be the logical one to compile some news from his district and send it on to the Sub-Editor; also 5RJ, of Kadina, was to be approached to sit on the Council as country representative and possibly also forward some notes from his district. These two moves should materially assist the Sub-Editor, who frankly admitted that the only reason for writing such a lot of piffle in the last few months had been due to a lack of anything in the way of news, and you will admit that the VK5 column has never been lacking in quantity, if it has been in quality. (Editor's Note.—At time of going to press no country news had arrived from 5BF or 5RJ.)

The VK5 general meeting for May will long be remembered as the most exciting of all time. The reason being that in order to test the feeling of the meeting on the question of the increase in the price of the magazine, 5PS moved a motion to the effect that the magazine be not accepted until the start of the next VK5 financial year. This motion was purely an impersonal one and only designed to bring out in the open a lot of people who appeared to resent the increase in price of the "mag." Before passing judgment on this motion the whole position from the view of the VK5 member should be examined. Briefly it is this. When the VK5 Division altered its financial year to suit the policy of all Divisions having the same financial year (a good policy too), the members were debited with approximately eighteen months subscription. Having paid this, they were told that the magazine had now risen in price and a further two shillings per head was to be debited against them. This reaches the total sum of £45, either to come from the Division's funds in a lump sum or from the members personally. Whichever way it goes the member has to foot the bill and quite a number feel that they have had "one put over them." It is not the monetary aspect, but the principle that seems to bother them.

We have now the position at the start of the discussion. Some hard things were said about the magazine, and some very complimentary things were said, but all sides were agreed that the "mag." was a definite necessity and should not be discontinued. Fierce and furious waged the battle, finally culminating in a vote, which favoured the motion 42 votes to 35, several members having left the meeting before the battle clouds had appeared on the horizon. Th vote was then discovered to be out of order owing to the fact that several associate members had voted, and under the VK5 rules associate members are not allowed to vote on matters of policy. 5PS at this stage having achieved results much greater than expected, offered to withdraw the motion, but as the seconder had now gone home it could not be done, and the meeting broke up in disorder with the decision to continue the discussion at a later date. All in all it was a great time, everybody enjoyed themselves, quite a number rose to their feet who had never had the temerity to do so before, this is all to the good, and even if nothing was achieved, at least it let a lot of people see that it is quite easy to get on one's feet and have one's say. Personally I think that the VK3 Magazine Committee would do well to examine the position in the light of the foregoing, which is a definite expression of feeling from a majority (a small one granted), but still a majority of Hams at a VK5 general meeting.

[The Magazine Committee did not increase the price of the Magazine, the decision to increase the price to 6d. per copy was made at a meeting of Federal Council.—Editor.]

I was talking to a new Ham the other day and asked him how he was doing, he said that he was doing fine. In answer to my question as to whether he had worked any DX he said, "yes, one station on phone, an LU! I haven't bothered to look it up yet to see where it is, but suppose it was one

of those Yanks up in the islands." Shades of Marconi, and I can remember when a South American was considered something to write home about. There's no doubt about it, Amateur Radio is fast losing all of its glamour.

I like the story about the VK5 Ham who became obsessed with the idea that moving around in his tummy was a radio valve. Nothing that anyone could do or say would convince him otherwise, and as his mental condition was deteriorating fast, his relatives called in "Doc" Barbier (5MD) and Ross Adey (5AJ) who finally agreed that the only way to cure the poor chap was to stage a mock operation and pretend to have removed a valve from his tummy. The Ham was quite agreeable to the operation, and while he was recovering from the anaesthetic, "Doc" and Ross secured an 807 valve and placed it beside the operating table. When the Ham was sufficiently roused "Doc" said, "well old chap, you were right and we were wrong, there certainly was a radio valve in your tummy, and there it is." Turning a wan face toward the 807, the Ham said weakly "That's not the radio valve in my tummy, mine is an 809!!

5IT is reported as having a terrific signal these days which is said to be coming from a new antenna, the details of which are still in the "hush hush" stage. It must be good, because all the 28 Mc. gang are talking about it in tones of awe. What about giving "Amateur Radio" exclusive rights to the story Tom?

During the hurricane last month, 5LR was fast asleep when his wife nudged him and said "Jack, wake up, I just heard something go crack in your wireless room." "Let it go crack," said Jack and pulled the bed clothes over his head and snuggled back to safety. Oh! that such cowardice should be.

When 5PS worked YV5AB this month he was foolish enough to give the YV his nickname of "Jim." Now everybody is addressing him as "JEEM" and asking him if he intends going to South America for his holidays.

Believe that the Burnside Police have been watching the very suspicious actions of two of the residents of that district who apparently ride around the streets in a green Morris 8/40, and stop at every pole and go through some peculiar antics with a little box to which is attached a small aerial. From the descriptions given it looks like 5RU and 5LW, but what on earth would they be likely to be doing that for?

Was talking to one of our leading DX kings the other day, when his young son came up and proudly announced that it was the first day of the month. When asked how he knew this fact he said proudly "because Dad's letters today all have front windows."

Ross Kelly built himself a "Plumbers' Delight" and is now looking for the bloke who christened it that name. Ross has called it plenty of choice names, but that name was never mentioned. Last seen he had a 30 foot ladder strapped to the side of the "Plumbers' ZZXEMBX" and I would not be surprised to see his name in electric lights in silent keys any day now.

An unconfirmed rumour is going the rounds in VK5 to the effect that Merv. Brown (5MB) has cancelled his licence owing to being QRL in his vocation. If this be true, then all I can say is that it is indeed bad news. Merv and his call has been synonymous in VK5 with Amateur Radio for more years than I care to remember. Most of the call signs beginning with VK5M were students at his classes formed to assist the embryo Ham when assistance was hard to get. His philosophy of Amateur Radio, that of cutting out the frills and teaching only the necessary points, paid dividends, and many a top Amateur to-day is a perfect example of his ability in that direction. It is to be hoped that whoever is lucky enough to secure his discarded call sign will fully appreciate the heights to which he is attaining.

Apparently the poor conditions existing in VK5 lately have prompted most of my contacts for news to decide to re-build or take on some constructional work, the nature of which has prevented them from gleaming any of the said news, but with the addition of the promised country notes my task becomes much easier. A dickie bird has whispered in my ear that the Editor is considering buying me a blue pencil for my own use, and as I can take a hint with the best of them, this will be all for this month.

WESTERN AUSTRALIA

The May meeting was held on Monday 10th. Over 60 members attended, and a new member—Don Dawson (call sign coming up)—was welcomed. VK6EL and VK6CN were visitors from Geraldton. We were very pleased to meet them in person. They had intended to visit more Perth shacks than they did, but their car broke down en route to North

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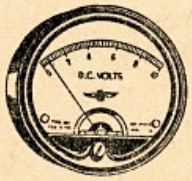

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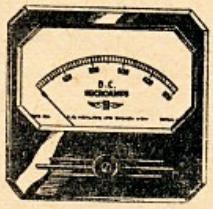

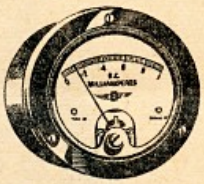

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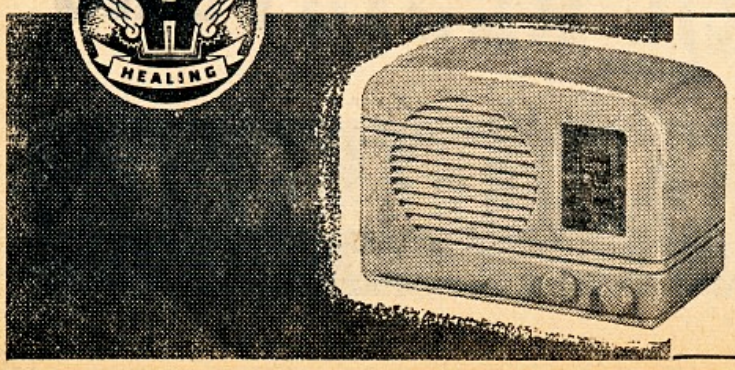

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H2.F.P

Beach—(6HC and 6WT)—so their programme went "hay-wire." Anyway Ern and Cyril, we hope you have had a safe trip back home.

QSL Officer VK6RU proposed a new system for handling QSL cards in VK6. The idea is similar to that used in South Africa, where Amateurs buy gummed stickers at so much per 100, fix one sticker to each out-going card, and hand them in to the Bureau. The only money transaction with the QSL Officer is when one buys a sheet of stickers. The proposed rate is 5/- per 100 stickers. This idea met the approval of Council and all present at the General Meeting.

The result of the poll as to the general feeling in VK6 about "Gremlin," was that only 36 votes were recorded, and 26 were in favor of "Gremlin" continuing in his present form.

The President brought up the matter about subscriptions for 1948. The financial year for 1948 commenced on 1st March. Are YOU financial? The number of unfinancial members was not generally realised until 6WH made his statement. The idea of commencing the financial year on 1st March is to bring all VK States into line.

It was also announced by 6WH that any Disposals equipment available for VK6 Amateurs would be ballotted for in future. Serial numbers of the equipment concerned would be drawn against the applicant's name. This system will obviate any picking and choosing and seems to be the fairest method of distribution.

At the conclusion of general business the usual rag-chews followed. Then 6AG gave us a chat on his recent visit to Brisbane. He did manage to see a few shacks whilst there, and remarked on the hospitality and co-operation of the VK4s he did contact. (Thanks for helping our Secretary back to his camp VK4!—Ed.)

Both 6KW and 6AG then gave a short lecturette on the two units which 6AG brought back as samples from VK4. It looks as though supply will not meet demand.

The meeting officially closed at 10.30 p.m. and we were clear of the building ahead of schedule for once.

PERSONALITIES

6AG is at present visiting VK4 on business. No doubt Wally is checking up on the possibility of obtaining some more Disposals equipment that will be of interest to VK6s. We are anxious to hear all about it Wally. 6GD was pleasantly surprised to hear Horrie burning up the ether around 28 Mc. Heard some f.b. reports on him too. 6KW has his SCR522 working nicely on 144 Mc. What's your best DX on 14 Mc. Ron? 6RT has staged a comeback on 7 Mc. Len must have seen May's Personalities before they went to print. Pleased to hear you again Len. 6TX is a stalwart on 7 Mc., and Jack is considering giving some of his crystals a few rubs to dodge some of the QRM.

We don't hear 6MU because of skip distance, but we do hear the DX coming back to him. Nice work the YV on 50 watts. 6AP is a 100 watt merchant and has earned a fine list of African countries. 6TB, "Tommy Baker's" new receiver is working and he puts Bayswater on the 28 Mc. map. 6HC is going 100 watts and is re-building the rig. We are missing his presence on 7 and 14 Mc., but know he will soon be back better than ever. 6MO spends a lot of time operating on all bands. He gives some really useful checks with his f.b. equipment at Watheroo. 6NW pounds the brass on 14 Mc. Guess he is hunting for a South American for his W.A.C. too.

6AW is getting a rig going on 144 Mc. and is apparently giving the DX bands the go-by for the time being. 6BC is really an O.T. and one of the first Hams in the VK6. Bert is still active on 7 and 14 Mc. and has some f.b. contacts considering his low power and QTH. 6DD not heard so often lately, but when there's DX on 28 and 14 Mc. John is right on to it. 6AS is at present quiet because of a move to Carnarvon but we are hoping he will get a small rig going from up there. How about a few lines, or even a QSO would be better Alec? 6DF haven't heard Morrie for ages. The beam will go rusty if you don't use it. 6AH and 6MH are too busy for Amateur Radio these days, and the 7 Mc. ZSs can't make out the quietness over there. How come Stan? 6DN is our c.w. DX man, but can't say I have heard him on lately.

6JS is buying up a stack of necessary parts to put 100 watts into an 813. We'll be looking forward to working you again Jack. 6FC re-broadcasts the W.I.A. news on 50 Mc. band each week-end, but only the VK6s listen to him. Frank wants his W.A.S. and is waiting for a M.U.F. or T.I. to come his way. 6LW works at the same place as 6FC and we have two minds with a single thought. Wally's portable 50 Mc. rig has been doing some good trips lately. 6IG is still heard regularly on 7 Mc., but we know Ian has other ideas also! Haven't heard 6KB for ages now. What's happening out there at Mt. Hawthorn? 6LM is a going concern on 7 and 14 Mc. now, and we expect to hear him on 28 Mc. any day now, or did you say 144 Mc. Lionel? 6MG Mac had a visit from 6JW last month, and we hear John now likes tomato sandwiches. Sounds odd but that's the way things were! 6NC congratulations Neil on another harmonic!—son and heir.

DX OF APRIL—BY VK6RU

Conditions on both 14 and 28 Mc. bands have shown a gradual falling off during this past month, particularly in regard to the latter band. Apart from this aspect, some choice stuff has been worked, as the following will show, but with the approach of winter we cannot expect band conditions to be what they were during the past interesting summer months.

28 Mc. Phone, Europe.—Nowhere near so consistent these days, although on the few occasions that the band has been open, quite a few good QSOs have resulted. Gs from the old country have again been in the majority and those from the other prefix districts were PA0CB, 0VH, 0OO, Holland; ON4BG, Belgium; GW4CC, Wales; GM3AVA, 3DAP, Scotland; I1ZZ, 1NQ, 1RO, Italy; F8EO, 8PA, 8TY, 8TU, France; OZ7TS, Denmark; ZB1E, 1AK, Malta; SM5PR and 5PL Sweden, and D4AQV U.S. Zone in Germany.

Africa.—This continent is showing its usual behaviour for this time of the year in that most signals have been anything up to S9 and over on numerous occasions. Among the best signals from the Union boys were ZS5BY, 1W, 2AA, 6LR, 6EB, 6CH, 6KF, 6JI, 1AG, 6JW and 5GQ. From farther north came ZE1JB, 7JH, OQ5BQ, Belgian Congo; ST2MP, Khartoum; VQ4CJG, 4HRP, Kenya, and ZD4AH Gold Coast, the latter being a most sought after contact for some months.

Asia.—Apart from the usual Js which seem ever present each day, the others worked were EQ2L, Persia or Iran; HL1AJ, 1AU, Korea; VS7RM, Ceylon; AP2D, 4D, 4B, Pakistan.

Oceana.—With short skip conditions prevailing, countries close to VK shores have been putting in signals mostly like locals, ZLs in particular.

North America.—Earlier in the month Ws were worked quite freely and plentifully, but from about the 20th onward, a rapid falling off on the band was observed. Some QSOs resulted, but not with the consistency of those made earlier. Reliability of W and VE contacts is not expected for the en-

suing few months. A few Ws were worked again, the long circle path through South Africa, but W4ROQ had by far the most outstanding signal. The only Canadians worked during our mornings were VE7WL and 7EB.

Central America.—With W activity not being so prevalent, more listening has been done with the beam South East, but the only two QSOs were with XE1SE and 1QE, Mexico.

South America.—CE1AH, in Chile, was worked three consecutive week-ends running—Ida and Larry being content these days to call CQ VK6 (only wish some more down that way would be as interested in us). PYTQG, in Natal, on the extreme North Eastern tip of Brazil put in a good signal from 1800-1900 hours three nights running over the great circle route through South Africa and provided a much needed PY contact post-war for a few of us. We understand he gave VK6MB his W.A.C. on 28 Mc. phone.

14 Mc. Phone.—This band is still showing its queer habits of late. Sometimes it's wide open for hours on end and sometimes not too good, but on the average has produced some very interesting features and contacts.

Europe.—This continent has been very spasmodic but generally the late afternoons and early mornings from 0100 onward have produced the best results. From late afternoon working I1KP Italy, EI9G Eire, G6AC England were QSOed and in the early a.m. hours GW5SA, Wales; D4ALN, 4AUW, Germany; EI2L, Eire; F8MY, France; I1SM, Italy; GI8UW, Northern Ireland; PA0UX, Holland; G6XR, 4IN, 8NY, 2IG, 8TH were all really f.b. QSOs.

Africa.—This time of the year certainly favours the ZS gang and from 2015 hours each evening pretty regularly they come through. Among the Union boys ZS6AJ, 5DF, 6FX, 1CH, 6KF, 1CG, 6HJ, 6LF, 1EZ, 3F, 6AA, 2AA and 1M had by far the best signals, many of these being new to 14 Mc. this season. From farther north came ZE2JQ, 2JK, 2JG, Southern Rhodesia; ET3AF, Ethiopia; VQ4DFF, 4RAW, Kenya.

Asia.—Amongst the usual poor signals (not in R strength) heard was C7TY, 3ZZ, China, and HL1AU Korea were the only QSOs had.

Oceana.—ZM6AF, Western Samoa, was the only contact made late one evening.

North America.—Ws have been very consistent this last month, all call districts being well represented. During most evenings the east side boys are worked and as the hour gets later one can work across the continent and finish up with W6 and W7 around midnight. VE4NI, 7VO, 7ZZ, 7UM were the only Canadian contacts and KL7UM the only Alaskan station worked.

TASMANIA

Things seem to have been quiet in VK7 for the past month or so. The summer field day season ended up with our last field day in April. The attendance was below the average but the weather was somewhat boisterous and discouraged most of the family members who didn't feel inclined to take the pot-lickers out in such weather. Len Jensen (7LJ), our worthy President, was first home and is running a close second to 7CW (Crosby Walch) on points for the season trophy which will be decided at the end of our financial year in February next.

The Council meeting for the month was held at the home of 7LJ and as the business was light (for a change) much Ham chatter was indulged in and an excellent supper was provided by Mrs. 7LJ. The monthly general meeting was held on the first Wednesday in May and the attendance was good. After the meeting 7CT regaled the company with "A trip to New Zealand on Kurrewa Three" or "Radio at sea in one hard lesson."

A move has been set afoot to form a zone of the W.I.A. in Northern Tasmania, and it shows the spirit that exists up there among the Northern gang. There are many active members in Launceston and the North-West coast and more seem to appear at every A.O.C.P. examination.

Our congratulations go to Lyn Brown, one of our associates who qualified at the last A.O.C.P. It seems to me that at every Council meeting we have an application for elevation from associate to full membership. Lord help us soon, what with the size of Hobart and the number of Hams, must take time off some day and work out the density per acre or something.

A committee has been formed to try and get the disposals angle tied up and give some of our country members a chance to participate in what is going.

7WI is on the air at 9.30 a.m. on the second and fourth Sunday in the month and it is hoped to increase its power shortly. However it seems to put an S8 signal into Launceston, maybe we'll get S9 in future.

By the way if you want to learn all about how to make marmalade, the recipe can be obtained from the Northwest Coast Mothers' Club. I really must listen again and see whether the skins go into the pot or not.

Doc Kelly (7LL) paid a visit to his home one week-end last month and must have taken time off from his studies in Melbourne.

7EJ is re-building the rig and hopes to put a few more watts into the final. 7SJ can be heard frequently with 7 and 14 Mc. phone—sounds well Syd. 7BJ was heard calling CQ last week, believe he worked 7AF. Some DX—every bit of four hundred yards.

7CT is calling tenders for the extermination of one b.c.l., lowest or any tender not necessarily accepted.

7NL is active in Launceston and heard 7JP and 7MY having a bit of a natter at the week-end. Alan has just bought a house—you fortunate individual—how about an introduction to the right estate agent Alan?

Well that seems to be about the lot, no one ever tells me anything. I have to go and find out, how about some of you VK7 chaps telling me some Ham chatter some time? Cheers for now and see you all next month.

NORTHERN ZONE

The groundwork for the formation of an active zone in the North has now been completed and it now only remains for State Council to forward us a proposed set of rules. If these are satisfactory to the local members our officers will be elected immediately.

It may have taken longer to reach this stage than some of our members anticipated, however it must be remembered that a little extra time and work expended in the first instance might save us a lot of worry later. Consideration must also be given to the fact that the time may not be too far distant when it will be necessary to form other zones on the island and we want a constitution that will be applicable to all zones.

There is one thing however that can be done immediately and that is for all members to decide to make our zone something to be proud about. If we all start with this idea I can assure you that it wont be long before we have something worth while.

Activity on the air this month has been very limited. Our "ultra high" men have been busy converting or re-building their equipment for the 144 Mc. band. Active Amateurs on this band in Launceston are 7BQ, 7TE and 7DB. 50 Mc. has certainly been given the go-by and it would be impossible to have a QSO in this zone on this frequency at present.

The only two stations consistently active on 14 Mc. are 7RK and 7LZ, and both of these are having trouble getting past the W stations. 7LZ called CQ no W recently and K1NAA answered and got the QSO on a technical point. 7GD and 7NL are both off the air at present. 7GD is re-building his final on ultra modern principles and 7NL is constructing a new receiver. 7BQ is still representing the zone on 7 Mc.

DX in this area has been rather patchy, however if the W stations could be dodged some interesting contacts could be had on 14 Mc. Several VOs have been active lately, the most consistent being VO1B, 1F, 1AC, 2AT, 2BX and 3X. Other good contacts on this band included FO8AA, VQ3HGE, YV1AZ, KM6AH, VE8AS, W2WMV/C9, CE7AA, PY2AL and VP5AM. On 28 Mc. the African continent has afforded us some excellent QSOs, however the only other station contacted except Asiatics and Ws was TI2FG. This band certainly needs more time than most of our members can afford to give.

CORRESPONDENCE

VICTOR (HK1FQ) STILL WELL

We received from VK2BT a letter which he had received from Victor Dugand (HK1FQ). His letter reads:—

"You have perhaps been wondering what has happened to your old friend Victor of HK1FQ. Well we have been almost in the hands of the Communists, my good friends! They almost succeeded in seizing the power, with lots of killings, fires, explosions and all kinds of terrorism! Thanks to God and with a coalition government of conservatives and liberals—the two old parties we have here and similar to the British parties—the situation was saved, but what a destruction; 30 per cent. of Bogota, our capital is destroyed, 15 per cent. of Barranquilla and other large cities.

"Of course all the Amateur Stations were closed and this is the reason HK1FQ is in a forced QRT. How long this state of emergency is going to last, I don't know. What I know is that my poor and dear country has suffered a tremendous blow, socially and economically. More than 100 million pounds sterling lost and over 5,000 criminals set free by the rebels—they opened all the jails! Well, let us hope for the best and place our confidence in God. Your very good friend, Victor.

"P.S.—Am enclosing a list of the 108 VKs that have not sent me their cards. I wonder if you could send them a post card as a reminder? Have not received, as yet, the following QSL cards:—

"VKs 2ABD, 2ACB, 2ADE, 2ADN, 2AES, 2AKO, 2AKR, 2APR, 2BD, 2BN, 2BZ, 2CE, 2CP, 2DN, 2EJ, 2ES, 2EQ, 2GA, 2GQ, 2GU, 2HK, 2HS, 2IE, 2JP, 2KS, 2NS, 2NY, 2NI, 2OY, 2PL, 2QA, 2QR, 2QP, 2VZ, 2WC, 2YF, 2XD.

"VKs 3ADR, 3ADS, 3AGO, 3AGY, 3AJB, 3AMP, 3AN, 3BH, 3BM, 3BZ, 3DS, 3EB, 3ED, 3ES, 3EZ, 3FO, 3HG, 3JD, 3KE, 3KS, 3KU, 3LG, 3LA, 3MV, 3OP, 3QG, 3QK, 3SK, 3SV, 3UJ, 3UR, 3VO, 3VJ, 3XD, 3WX, 3YH, 3ZJ, 3ZL.

"VKs 4CG, 4CS, 4DO, 4GJ, 4FN, 4HC, 4KG, 4KW, 4OY, 4UL, 4UX, 4ZB; 5AF, 5AI, 5AO, 5BF, 5GL, 5LC, 5RS, 5WG, 5XX, 5XO; 6KE, 6MV, 6NL, 6LM; 7AB, 7TR, 7XM, 7GH; 9MK.

"230 different contacts made in Australia, 122 QSLs received, 108 QSLs missing and listed above."

[Some of the calls listed above may have QSLed in which case it is obvious that HK1FQ has never received them. It is possible that cards were forwarded through the Bureau, consequently if HK1FQ is not a member of his National Society it is possible that they have never been forwarded on to him. HK1FQ's address for the benefit of those who wish to send cards direct is Victor Dugand, Barranquilla, Colombia.—Editor.]

PEN FRIEND REQUESTED

AC1 Stainthorpe, S.D., No. 2354272
Signals Sect., R.A.F. Linton-on-Ouse,
York's, Yorkshire,
England.

Dear Sir,

I'm writing to inquire if there is any friend or member who would like to correspond with me. My age is 18½ years and I'm a member of the following clubs, etc.: Radio Society of Great Britain, British Short Wave League, International Short Wave League, Guild of Radio Service Engineers, Institution of Radio Engineers. I'm at present studying for Amateur licence via the R.A.F. I will be looking for a reply soon so I'll close now.

—S. D. STAINTHORPE.

FOR SALE, EXCHANGE, WANTED

9d. per line, minimum 2/-

FOR SALE.—Bendix TA301B 100 watt aircraft transmitter, 802 osc., 807 dblr., parallel 828s p.a., 2-15 Mc., £25. Genemotor power supply, 1000 v. 500 Ma., 250 v. 100 Ma., 24 v. input, £5. 750-0-750 oil filled 240 v. input 24 k.v.a. £4. 1875-0-1875 240 v. input 500 Ma. £4/10/-. AT5-AR8 (less A.C.U.) £12. Type S supply (for AT5-AR8) £10. Two 300 Ma. filter chokes £2/10/-. Two 200 Ma. filter chokes £1. Type C all-welded rack 5' 6", 19" panel £2. AR7 rack 17¾" panel £1. 200-260 primary, 110-0-110, 2 x 2.5-0-2.5, 2 x 5-5, £1/10/-. 240 v. primary, 24-32 v. 16 amp., £2/10/-. 10 tube v.h.f. receiver (R-1132) 100-124 Mc., £15. B. Aubrey, VK5AY, Weather Office, Darwin (N.T.).

SELL OR EXCHANGE for a.c. Ham Receiver, nearly new Zenith a.c. Modulated Oscillator. Adjust reasonable difference. R. Shortt, VK5SR, Tennant Creek, N.T.

WANTED.—Coil contact fingers for AMR200 receiver switch unit. Apply VK3ARV, 18 Madden Grove, Burnley.

WANTED.—3A5 (twin battery triode), good price for good tube, VK3QO, 32 Redesdale Road, N.21, Victoria.

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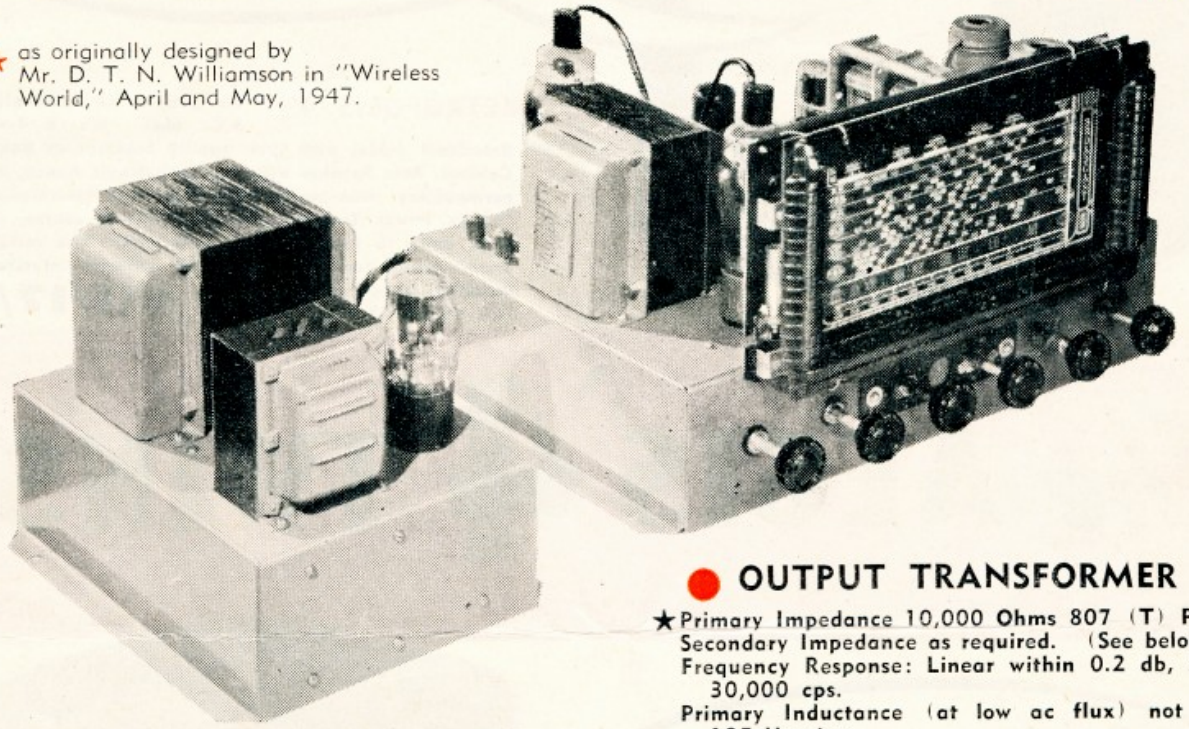
MATCHED KITS

for THE NEGATIVE FEEDBACK AMPLIFIER ★

★ as originally designed by Mr. D. T. N. Williamson in "Wireless World," April and May, 1947.



★ CONDENSER INPUT POWER SUPPLY

	Type No.	Price
1 P/Trans	20453	£3 16 1
1 Choke	201515	£1 11 10
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(Radiotronics Circuit A515)

1 P/Trans	25563	£4 18 8
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★ Primary Impedance 10,000 Ohms 807 (T) P.P.
Secondary Impedance as required. (See below).
Frequency Response: Linear within 0.2 db, 20 cps. to 30,000 cps.
Primary Inductance (at low ac flux) not less than 125 Henries.
Leakage Inductance: 17 Millihenries.
Insertion Loss: 0.4 Decibels.
This transformer may be used to obtain a gain reduction of up to 25 db across 4 Stages in a suitable negative feedback circuit. ★

★ OUTPUT TRANTFORMERS

AF8	8 ohm	V/Coil
AF15	15 ohm	V/Coil
AF10	500 ohm	Line

or as specified.

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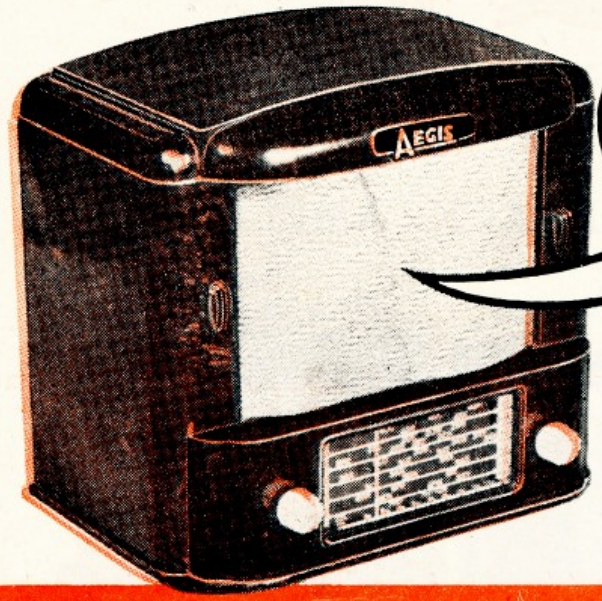

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